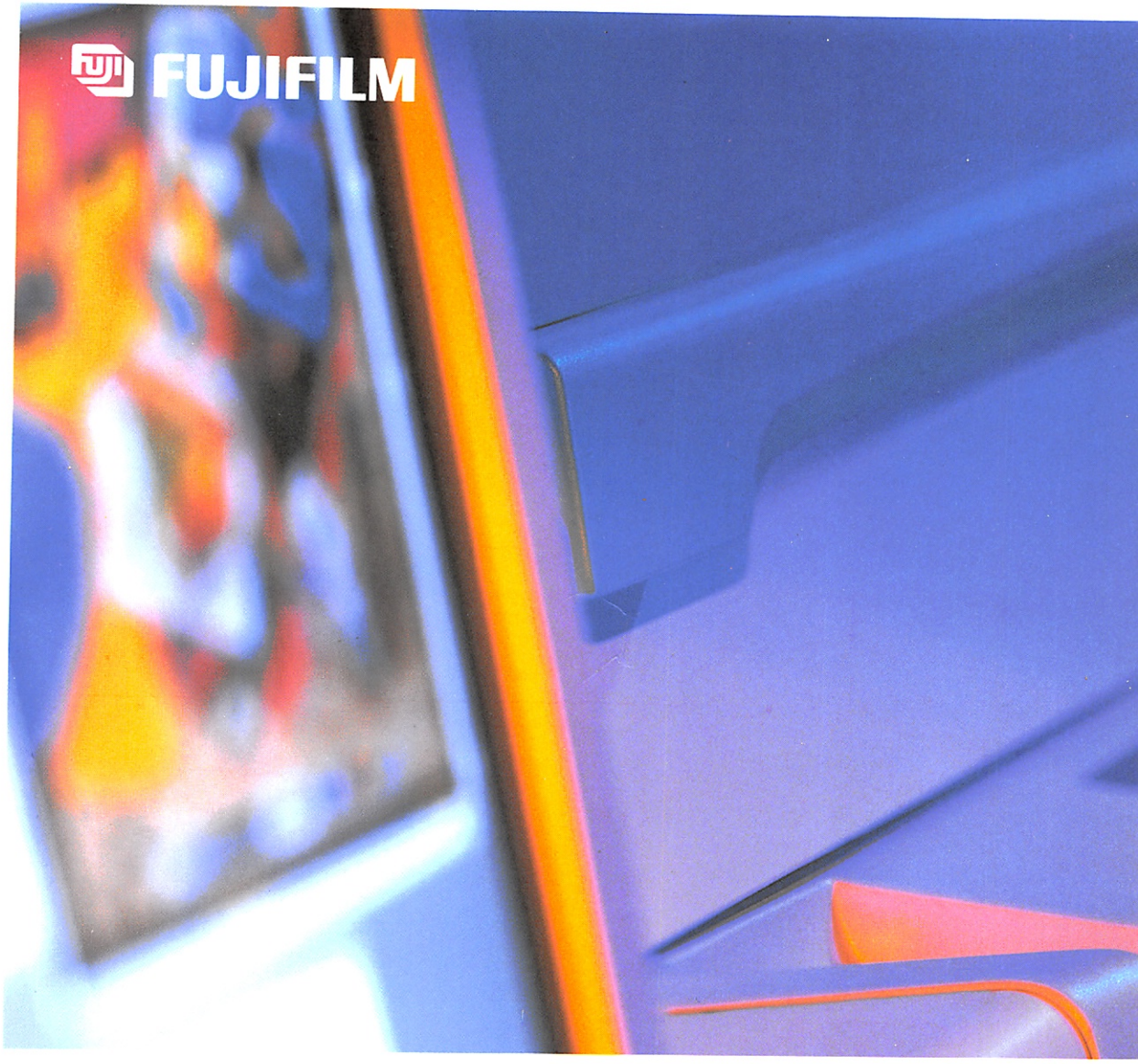


Celsis

Macintosh User Interface Manual

6700804002

Celsis™ 5250/6250 with C.A.S.C.

Celsis™5250/6250 with C.A.S.C.

Macintosh User Interface Manual
6700804002

IMPORTANT

FUJIFILM™ products are so designed and constructed as to be safe and without risk to health when properly used (in accordance with the supplied documentation) and when the safety precautions contained in this document are fully observed.

This document was produced by the Technical Publications Department, FUJIFILM Electronic Imaging Ltd.

© 1997
FUJIFILM Electronic Imaging Ltd.
Three Cherry Trees Lane
Hemel Hempstead
Hertfordshire HP2 7RH
England
Registered Number: 3244452

Tel: 01442 213440
Fax: 01442 345432

This document was printed by the Documentation Centre, FUJIFILM Electronic Imaging Ltd

This document must not be copied without prior written authorization, and although correct at the time of writing is subject to change without notice. For further information contact the Customer Services Manager, FUJIFILM Electronic Imaging Ltd, at the address given on the front page of this manual.

WARNING

All precautions mentioned in this document must be strictly observed at all times. Personnel MUST therefore read the contents of the document BEFORE commencing any work on the equipment described in the document.

Improper use of controls and switches, failure to comply with warnings, and the performance of adjustments or procedures not specified in this document may expose personnel to danger.

CAUTION

FUJIFILM Electronic Imaging Ltd cannot be held responsible for any loss or damage to customers' data by unauthorised third parties accessing this system. In the event that FUJIFILM Electronic Imaging Ltd becomes aware of any computer virus which will or is likely to affect the system it will take reasonable steps to bring this to the attention of customers but advises customers to take their own precautions against unauthorised access.

About this Document

This manual is a guide to operating the Celsis™ application, which is a system that interfaces a scanner to a Power Macintosh. This release describes version V2.1 of the Celsis™ software and systems equipped with Celsis™ Advanced Scanner Control (C.A.S.C.).

The manual includes details on using scanners for performing analyse scans. However the details of setting up the scanner are not included. Refer to the Celsis™ 6250 or Celsis™ 5250 Scanner with C.A.S.C. Operator's Manuals, see *Associated Documents*.

The manual assumes a familiarity with the basics of operating a Macintosh (opening folders, starting applications etc.).

When the manual illustrates a screen it shows a typical display, rather than a replica of each display that might appear on your screen.

Trademarks

FUJIFILM is a trademark of FUJI Photo Film Co., Ltd that may be registered in certain jurisdictions.

Celsis and MagnaLink are trademarks of FUJIFILM Electronic Imaging Ltd that may be registered in certain jurisdictions.

Magnascan is a trademark of Crosfield Electronics Limited that may be registered in certain jurisdictions.

Waterproof is a trademark of E.I. Du Pont Nemours Company that may be registered in certain jurisdictions.

Adobe, Adobe Photoshop and PostScript are trademarks of Adobe Systems Inc. that may be registered in certain jurisdictions.

EPS is a trademark of Altsys Corporation that may be registered in certain jurisdictions.

ColorStudio is a trademark of Esselte Letraset Ltd that may be registered in certain jurisdictions.

Apple, Finder, System 7, the Apple Logo, Power Macintosh and Macintosh are registered trademarks of Apple Computer Inc. that may be registered in certain jurisdictions

Kodak and Ektachrome are trademarks of the Eastman Kodak Company that may be registered in certain jurisdictions.

QuarkXPress is a trademark of Quark Incorporated that may be registered in certain jurisdictions.

Scitex is a trademark of Scitex Corporation Ltd that may be registered in certain jurisdictions.

Sony and Trinitron are trademarks of Sony Corporation that may be registered in certain jurisdictions.

NuBus is a trademark of Texas Instruments Inc. that may be registered in certain jurisdictions.

All other company names, products or brand names are trademarks of their respective holders.

Associated Documents

Celsis™ 5250/6250 with C.A.S.C. Pre-Installation Manual 67006840

Celsis™ 6250 Scanner with C.A.S.C. Operator's Manual 67008060

Celsis™ 5250 Scanner with C.A.S.C. Operator's Manual 67008050

Celsis™ 5250/6250 with C.A.S.C. Tutorial 67008480

Macintosh Owner's Guide.

Macintosh System Software User's Guide.

Relevant manuals supplied with DTP applications.

Contents

Chapter 1 Introduction

1.1 What is the Celsis™ 5250/6250 (C.A.S.C.) System? 1-1
1.1.1 The Celsis™ Application 1-1
1.1.2 RGB Standard Images 1-2

1.2 Macintosh Configuration 1-4
1.2.1 Macintosh Specification Requirements 1-4
1.2.2 Swapping the Macintosh 1-5

1.3 Starting the Celsis™ Application 1-7
1.3.1 Re-selecting 1-7

Chapter 2 Safety

2.1 Health and Safety at Work 2-1
2.1.1 Warnings and Cautions 2-1

2.2 Clothing and Jewellery 2-2

2.3 Equipment and Tools 2-2

2.4 Site Safety 2-3
2.4.1 Safety Devices 2-3
2.4.2 Attending Equipment 2-3

2.5 Mechanical Safety 2-4

2.6 Electrical Safety 2-5

Chapter 3 Functional Description

3.1 Introduction 3-1

3.1.1 Setting Up the Macintosh 3-1

3.1.2 Setting Up the Scanner 3-3

3.1.3 Retrieving a Stored Setup File 3-3

3.1.4 Prescans 3-5

3.1.5 HR Scans 3-7

Selecting a Folder and Image Name - Saving as a Job 3-8

Save Job As... 3-9

3.2 Menu Structure 3-10

3.2.1 File Menu 3-10

Analyse Control A 3-11

Job Sheet J 3-11

Open Prescan P 3-11

Save Prescan As 3-11

Open Job O 3-11

Save Job As S 3-11

Open Setup 3-12

Save Setup As 3-12

Preferences 3-12

Quit Q 3-12

3.2.2 Edit Menu 3-13

Undo Z 3-13

Cut X 3-13

Copy C 3-13

Paste V 3-14

Clear 3-14

Select All A 3-14

3.2.3 Image Menu 3-15

View Queue Image I 3-15

Show Points 3-15

Chapter 3 Continued

Cursor Zoom 3-16
Redisplay R 3-16
3.2.4 Queue Menu 3-16
Analyse Queue 3-16
Expose Queue 3-17
Image File Folder 3-17
Scan Type 3-17
Status 3-17
Format 3-17
Resolution 3-18
Queue from Scanner 3-18
Autocrop Cylinder 3-18
Job Log 3-18
3.2.5 Special Menu 3-19
Select Scanner 3-19
Release Scanner/Reserve Scanner 3-19
Operation Log 3-19
Film Safe Screen 3-19
3.2.6 Keyboard Shortcuts 3-20

Chapter 4 Setting Preferences

4.1 Introduction 4-2

4.2 General 4-3
4.2.1 Changing the Preferred Units 4-3
4.2.2 Setup File Folder 4-3
4.2.3 Scratch Folder 4-4
4.2.4 Luminosity Folder 4-4
4.2.5 Leave Job Sheet Open 4-4
4.2.6 Job Files 4-5
4.2.7 LR Files 4-5

Chapter 4 Continued

4.3 HR Scan 4-6
4.3.1 Preview HRs while Scanning 4-6
4.3.2 Greyscale Image Channel 4-6
4.3.3 Photoshop™ File Format 4-6
4.3.4 HR to Film Text 4-6

4.4 PreScan 4-7
4.4.1 View Prescans while Scanning 4-7
4.4.2 Save to Prescan Folder 4-7
4.4.3 Auto Redisplay 4-8
4.4.4 Auto Negative Detection 4-8
4.4.5 Prescan Size 4-8
4.4.6 Autocrop Resolution 4-9
4.4.7 Prescan Folder 4-10

4.5 Queue 4-11
4.5.1 Default to 'Add' to Queue 4-11
4.5.2 Stop to Change Between Reflection and Transmission 4-11
4.5.3 Display Items 4-11

4.6 Monitor 4-12
4.6.1 Monitor Selection 4-12
4.6.2 Lighting 4-13
4.6.3 Print Process/Print Conditions 4-13

Chapter 5 Setting Scan Parameters

5.1 Introduction 5-1

5.2 Setup File 5-2

5.3 Setup Sheet 5-4

Chapter 5 Continued

5.4 Luminosity 5-5
5.4.1 Saving Luminosity Data 5-7

5.5 Grey Balance and Print Density 5-8
5.5.1 Grey Balance 5-9
Procedure for Setting Grey Balance 5-9
The Grey Balance Test Forme 5-11
Grey Balance Set-up Procedure 5-11
5.5.2 Grey Balance Window 5-16
5.5.3 Print Density 5-16

5.6 Enter White and Black 5-19
5.6.1 Manual Enter White 5-22
5.6.2 Automatic Enter White 5-22
5.6.3 Automatic Neutral Enter White 5-22
5.6.4 Manual Enter Black 5-23
5.6.5 Automatic Enter Black 5-23
5.6.6 Automatic Neutral Enter Black 5-23

5.7 Tone Boost 5-24
5.7.1 Perm. Tone 5-25
5.7.2 Channel Boost 5-25

5.8 Cast 5-27
5.8.1 Cast 1 and 2 5-29
5.8.2 Cast 1 Pivot Points 5-29
5.8.3 AN Top Density % 5-29
5.8.4 Neutral Selectivity 5-30

5.9 Colour Correction 5-30

5.10 Pastel Boost Window 5-31
5.10.1 Level 1 5-31

Chapter 5 Continued

Pastel Boost 5-31
Pastel Mode 5-32
Colour Enhance 5-32
5.10.2 Level 2 5-33
Pastel Curve 5-33
Colour Enhance Curve 5-34

5.11 Black Printer 5-35
5.11.1 Setting up the Black Printer 5-35
5.11.2 Offset and Slope - CAL 11 5-36
5.11.3 Black Curve - CAL 514 5-37

5.12 UCR - PCR Data 5-40
UCR 5-40
PCR 5-41
5.12.1 UCR Active 5-41
5.12.2 UCR Breakpoint and Slope (Cal 515) 5-42
5.12.3 CAL 14 5-42
UCR Selectivity 5-43
Black Replacement 5-43
5.12.4 PCR Active 5-45
PCR Gain 5-45
Black Control (Cal 524) 5-46
Colour Weight Under Black (Cal 523) 5-46
Print Weight % (Cal 65) 5-46
5.12.5 UCR - PCR Level 2 5-46
Colour Selective UCR Slope 5-47
PCR Data 5-47
Highlights (Cal 525) 5-47
Additivity Factor 1 (Cal 521) 5-49
Additivity Factor 2 (Cal 522) 5-49
H/L Colour Modifiers 1 and 2 (Cal 527) 5-50

Chapter 5 Continued

Black Modifier (Cal 528) 5-50
PCR Ink Correction Curve (CAL 520) 5-50
PCR Colour Correction (Cal 526) 5-51

5.13 Catchlight 5-53

5.14 USM Data 5-54
5.14.1 Preset USM Mode 5-55
5.14.2 Manual Mode 5-56
USM Sharp 5-56
USM Smooth 5-56
5.14.3 Cross-coupling of USM Data 5-56
5.14.4 Black Gain 5-57
5.14.5 USM Level 2 Functions 5-58
Extra Black Channel Fringe Controls 5-58
Threshold 5-59
Fringe Clip 5-60
Density 1 and Density 2 5-61
Colour Gain 5-61
Negative Gain 5-62
White Attenuation 5-62
Preset Sharp 5-62

5.15 Limits 5-63

5.16 Sampling 5-64

5.17 Saturation 5-67

Chapter 6 Using the Celsis™ Application

6.1 Introduction 6-1

6.2 Analyse Control 6-3

6.2.1 Closing the Analyse Control Window 6-6

6.2.2 Changing the Scanner Setup - Updating 6-6

6.2.3 Saving an Image File 6-7

6.2.4 Changing the Setup File to be Used 6-7

6.2.5 Changing the File Format 6-7

6.2.6 Format Summaries 6-9

TIFF CMYK 6-9

TIFF RGB 6-9

TIFF Greyscale 6-9

TIFF Bitmap 6-9

Photoshop™ 2.0 CMYK/RGB/Gray 6-10

EPS CMYK/RGB 6-10

EPS Greyscale 6-11

EPS Bitmap 6-11

Cros DDEF CMYK/RGB 6-11

Scitex CT CMYK/RGB (Handshake) 6-11

Cros NGS 6-12

DCS 6-12

6.2.7 Disk Space Information 6-12

6.2.8 Scan Setup 6-12

6.2.9 Changing the Orientation 6-13

Right 6-15

Left 6-16

Up 6-17

6.2.10 Starting the Scan 6-18

6.2.11 Scanner Busy 6-20

6.2.12 Aborting the Scan 6-21

Chapter 6 Continued

6.2.13 Selecting a Folder and Image Name - Saving as a Job 6-22

6.3 Prescan and Image Editing 6-24

6.3.1 Crop-size Window 6-26

Introduction 6-26

Dimensioning a Cropped Image 6-27

Cropping an Image 6-27

Define Crop Area: 6-27

Normal Cropping 6-28

Fixed Ratio Crop 6-28

Magnification: 6-29

Distortion: 6-29

To Start Afresh: 6-29

Autoscan After Cropping 6-29

6.3.2 Enter White and Black 6-30

Original Density, Dot % and the Eye Dropper 6-31

Manual Enter Black on a Colour 6-33

Out of Range Staining 6-33

6.3.3 Image Colour Editing 6-34

Show Points 6-34

Show Values 6-34

Sample Points 6-35

Cast 6-37

Colour Correction 6-37

Cal 12 Values 6-39

To Use with Sample Points 6-39

Cursor Zoom 6-40

Redisplay R 6-40

6.3.4 Job Sheet 6-40

Image Dimensions 6-42

Chapter 6 Continued

Image File 6-43
Disk Space 6-44
Scan Setup 6-44
Download/Add 6-44
6.3.5 Cancel Edits 6-45

6.4 Queue Control 6-47
6.4.1 Queues 6-47
Analyse Queue 6-47
6.4.2 Job Editing 6-48
Edit Options 6-49
Scan Type 6-50
Status 6-50
Format 6-51
Resolution 6-51
Queue from Scanner 6-52
Autocrop Cylinder 6-54
Job Log 6-54

6.5 Autocrop 6-55
6.5.1 Mounting Transparencies on Drum 6-55
6.5.2 Using Autoscan with Autocrop 6-57
6.5.3 Using Autobalance with Autocrop 6-58
6.5.4 Using Autofocus with Autocrop 6-58
6.5.5 Starting an Autocrop Scan 6-59
6.5.6 Autocrop Prescan Images 6-59
6.5.7 Auto Negative Detection 6-59
6.5.8 HR Image names 6-60

6.6 Special Options 6-61
6.6.1 Select Scanner 6-61
6.6.2 Release Scanner 6-62
6.6.3 Operation Log 6-62

Chapter 7 Workflows

7.1 Workflow 1 - Autocrop and Macintosh Setup 7-1

7.2 Workflow 2 - Queue from Scanner 7-4

7.3 Workflow 3 - Concurrent Setup 7-6

Chapter 8 Help and Error Messages 8-1

Index Index-1

Figures

3.1 Menus showing keyboard shortcuts 3-21

5.1 Grey balance test forme 5-10
5.2 Creating the grey balance graph 5-12
5.3 Plotting the magenta and yellow curves 5-14
5.4 Finding CAL 13 dot % values for magenta and yellow 5-15
5.5 Print density graph - stage 1 5-17
5.6 Print density graph - stage 2 5-18
5.7 CAL 11 offset and slope 5-36
5.8 UCR breakpoint and slope 5-42
5.9 Black replacement graph 5-44
5.10 PCR restricted to highlights 5-48
5.11 PCR restricted to shadows 5-48
5.12 Dot % variations across an edge 5-54
5.13 Effect of threshold 5-60
5.14 Fringe clip applied to light and dark fringes 5-60
5.15 Roll-off 5-61

7.1 Workflow 1 - Autocrop and Macintosh setup 7-2
7.2 Workflow 2 - queue from scanner 7-4
7.3 Workflow 3 - concurrent setup 7-7

Table

5.1 Recommended USM settings 5-55

Issue Records

Chap	Pages	Issue	Date	Comments/Changes
Prelim	18	02	03/97	Transfer to FUJIFILM
1	8	02	03/97	Name changes
2	6	02	03/97	Name changes
3	22	02	03/97	Name changes
4	16	02	03/97	Name changes
5	68	02	03/97	Name changes
6	62	02	03/97	Name changes
7	10	02	03/97	Name changes
8	8	02	03/97	Name changes
Index	4	02	03/97	Name changes

Note: The ISSUE STATE of a document or chapter is indicated by the last two digits of its document number (e.g. the first re-issue of document *6500123000* becomes *6500123001*, and the second re-issue becomes *6500123002* etc.). A change of issue state indicates that substantial changes have been made to the document or chapter, although this does not necessarily mean that the contents of each page have changed.

Introduction 1

This chapter describes the Celsis™ 5250/6250 (C.A.S.C.) drum scanner and the Macintosh-based scanner control system. It describes how to start the system and comments on the Macintosh configuration.

1.1 What is the Celsis™ 5250/6250 (C.A.S.C.) System?

The Celsis™ 5250/6250 (C.A.S.C.) system is a high quality drum scanner from FUJIFILM™. A fundamental component of the scanner is the Macintosh-based scanner control system. The latest multi-tasking techniques allow the operator to simultaneously set-up jobs while the queue controls the scanning of images. When edits have been completed on the Macintosh, each job is placed in an automatic queue for output over a network or to a local or remote disk.

A range of automated and pre-set scanner functions, including Autocrop, Autoaperture, Autofocus and Autoscan, complement the easy-to-use Celsis™ application on the Macintosh.

1.1.1 The Celsis™ Application

The Celsis™ application runs on a Power Macintosh and allows the productive output of quality high resolution (HR) images. For Open Prepress Interface (OPI) compatibility, low resolution (LR) images can be scanned to any volume mounted on the host Macintosh in a number of standard and proprietary image file formats. The system allows concurrent setup of images and scanning utilizing a SCSI board sited in an expansion slot in the host Macintosh. A queue mechanism is used for image scanning that means the scanner will continue rotating until all the required

tasks have been completed. It will also start any scanning task designated when further jobs are added to the queue, even if the previous tasks have been completed. You have full control over the flexible queueing system with the ability to start and stop at your convenience, jobs can be reordered or deleted and saved to disk, individually or saved as a queue.

Images stored on the Macintosh can be manipulated using a desktop image editing package e.g. Adobe Photoshop™. With the background operational capabilities of the application it is also possible to complete these editing tasks while the scanner continues its scanning tasks. The only performance limitation will be due to the configuration of the Macintosh.

The system is implemented as a set of PCBs with a 1 Gbyte buffer disk installed in the scanner. A SCSI interface card and cable connects the scanner to the Macintosh and the Celsis™ application on the Macintosh.

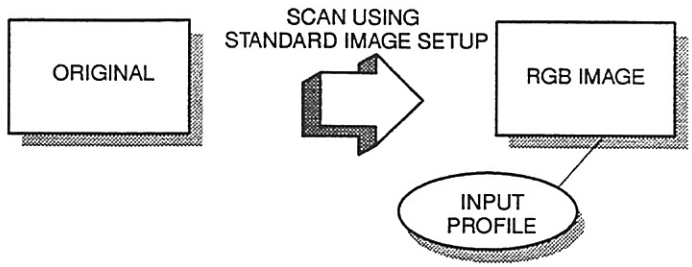
Accelerated operation is provided by the Crab board which is installed in the host Macintosh. This is installed as standard on the Celsis™ 6250 (C.A.S.C.) scanner and is an option (via the Celsis™ Accelerator Upgrade) on the Celsis™ 5250 (C.A.S.C.) scanner.

1.1.2 RGB Standard Images

This software provides functions which enable the rapid scanning of RGB-format images which conform to the International Colour Consortium (ICC) cross-platform format.

To input an image in this format the Celsis™ application:

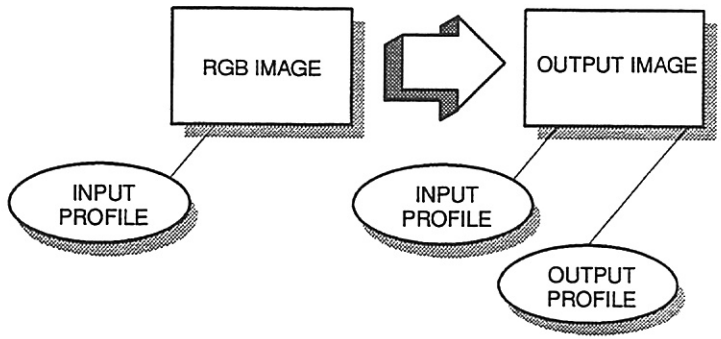
- substitutes RGB standard parameters in place of the normal FUJIFILM™ setup values (BVs),
- attaches an input profile to compensate for differences between transmission and reflection originals.



The requirement for RGB standard images is detected when an ICC Profile is selected during setup. The software automatically:

- applies the required edits to the job file,
- disables all setup functions except **Crop Size** (an override checkbox is available to restore the editing function if required),
- disables all formats except **TIFF RGB**.

Images can be modified at output to meet the requirements of the output device (a printing press for example) by attaching an output profile.



The attaching of output profiles is not supported within this application.

1.2 Macintosh Configuration

The Celsis™ 5250/6250 (C.A.S.C.) system is installed by your vendor's engineer. The equipment supplied does not include a Power Macintosh, so you are free to use any Power Macintosh you choose in the system (subject to the specification recommendations detailed below).

1.2.1 Macintosh Specification Requirements

The Apple Macintosh Computer connected to a new Celsis™ 5250/6250 (C.A.S.C.) system must have a specification, at least equal to, the recommended platform shown below:

PCI Power Macintosh:

- Hard disk: 500 Mbyte,
- Memory: 48 Mbyte minimum,

  The application must be set to run with a minimum of 25 Mbyte of RAM. Running with less memory may cause Macintosh lock-ups or failures.
- 2 free PCI expansion slots accepting full height and width boards,

  Only one free slot is required for the Celsis™ 5250 (C.A.S.C.) scanner but the other may be required later if upgraded.
- Keyboard: Apple extended,
- Mouse,
- Colour monitor with
  - 16, 17 or 21 inch screen
  - 24 bit display capability
  - 6500 K or 5000 K colour temperature,
- Software: Macintosh operating system version 7.5.3 or later,

- Transceiver: Transceiver that is appropriate for customer's network.

Note: A Power Macintosh 6100 must ***not*** *be used due to the limited number of expansion slots.*

With certain upgrades an existing NuBus Power Macintosh may be retained for use with this software, providing it meets the specification in all other respects.

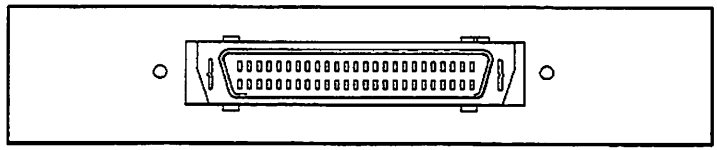
These recommendations are intended as guidelines only and any recommendations made by the suppliers of the colour retouch packages to be used should also be taken into account.

1.2.2 Swapping the Macintosh

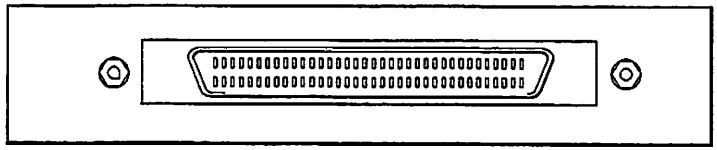
When swapping Macintosh computers, the Crab board (if fitted) and SCSI board installed in the original Macintosh can be used in the new Macintosh providing that the two computers have the same bus type.

If you are changing between a PCI and NuBus Macintosh, different boards and SCSI cable are required. In this case refer to your service provider for more information. A picture of board end-plates is shown below to help you identify them:

END PLATE FOR NUBUS MACINTOSH CRAB BOARD



END PLATE FOR PCI MACINTOSH SCSI BOARD



For details of how to swap a board refer to the documentation supplied with the Macintosh.

CAUTION

Before swapping the board ensure that ALL equipment is powered down. Follow the antistatic precautions described in the Apple documentation.

If you are using a NuBus Macintosh a blocker board must also fitted to ensure that adding the Crab board does not put the total current consumption of the fitted boards above the maximum specified for all NuBus slots.

Once you have installed the Crab board in the replacement Macintosh, simply plug in the SCSI cable from the analyse unit.

1.3 Starting the Celsis™ Application

Start the Celsis™ application on the Macintosh by using any of the standard methods, for example by double clicking on the application. Refer to the documentation supplied with your Macintosh for details.

You may need to use the **Find** item from the **File** menu to locate the Celsis™ application. The Celsis™ application icon is:

For ease of access the Celsis™ application alias icon should reside on the desktop, or in a folder on the desktop.

On starting the Celsis™ application the menu bar at the top of the desktop changes to:

File Edit Image Queue Special

and the Celsis™ application icon is displayed at the top right hand corner of the desktop in the Finder.

1.3.1 Re-selecting

If you switch away from Celsis™ application, you can reselect it as follows.

If you have any of the application windows open, simply click in the window.

If you do not have any of the application windows open:

- Double click on the application icon.
- Press and hold on the Finder icon ( ) at the top right hand corner of the desktop.
- Drag the cursor over the Celsis™ application icon ( ) then release.

TOC

Safety 2

This chapter provides important safety information and must be read before powering up and operating the equipment.

2.1 Health and Safety at Work

All personnel are advised to familiarize themselves with any local or national legislation relating to health and safety at work. Particular attention should be given to those sections covering personal responsibility regarding safe working practices which must be strictly observed at all times.

This chapter explains the safety conventions used in this manual and highlights safety practices specific to this equipment.

2.1.1 Warnings and Cautions

There are two safety categories, namely WARNINGS and CAUTIONS.

WARNINGS are given for conditions which may endanger the safety of personnel.

WARNING

The instructions given in warnings must be followed precisely. They are given to avoid injury or death.

CAUTIONS are given for conditions which may cause damage to equipment or materials.

CAUTION

The instructions given in cautions must be followed to avoid damage to equipment or materials.

2.2 Clothing and Jewellery

Do not wear clothing or jewellery which could be hazardous when in contact with any part of the equipment.

2.3 Equipment and Tools

Use the tools and wear the protective clothing as may be recommended.

2.4 Site Safety

Most accidents will be avoided if you follow these simple rules:

- Familiarize yourself with the location of mains switches and equipment on/off switches.
- Always obey the warnings, cautions, and any other instructions included in this and relevant equipment manuals or attached to the equipment.
- Never attempt to perform procedures that are not included in this manual.

2.4.1 Safety Devices

Ensure that all safety controls, such as brakes, interlocks, circuit brakes, indicators, covers, guards and warnings labels are present and functioning correctly.

Unless essential for commissioning or servicing and under prescribed conditions, never override, negate or otherwise bypass safety controls, such as brakes, interlocks, circuit breakers, indicators, covers and guards.

2.4.2 Attending Equipment

Never leave equipment unattended unless in a safe condition with respect to mechanical, optical, chemical, electrical or other hazards.

2.5 Mechanical Safety

The following basic precautions apply to the system, and also to the equipment with which it is used.

- Do not attempt to lift heavy equipment on your own. Obtain assistance from able-bodied persons or use suitable equipment as instructed in the manual.
- Always close equipment doors and access panels to prevent anyone colliding with them.
- Avoid leaving electrical cables trailing where anyone may trip over them.
- Make sure that mechanical servicing is undertaken only by properly authorized personnel.

WARNING

If you close the left-hand analyse-unit lid when the right-hand lid is also open, the right-hand lid will close unaided, causing possible injury.

2.6 Electrical Safety

- Check mains cables regularly to ensure that they are not worn or damaged.
- Ensure that water and other liquids do not come into contact with the equipment.
- Do not attempt to operate the equipment when flammable or volatile substances are present in the atmosphere.
- Ensure that the correct type of fire extinguishers (BCF or CO_2) are present in the operating areas, and that they are regularly serviced.
- Ensure that electrical servicing is undertaken only by properly authorized personnel.

Safety labels are fitted to the equipment to warn you of potential hazards. These labels must not be defaced or removed.

TOC

Functional Description 3

This chapter introduces the use of Celsis® 5250/6250 (C.A.S.C.) scanning system to perform input scans.

The methods of using the scanner system are described in Section 3.1 Introduction. *The menu structure is described in Section 3.2.*

In this and subsequent chapters an instruction-response format is used, where an instruction to perform an operation is followed by the response that the software makes. Where a response is obvious it may be omitted. Any error messages that may be displayed are detailed in Chapter 8.

3.1 Introduction

After start-up the Analyse Control window is displayed with the last used settings shown. Set the preferences that you wish to use, see Chapter 4 *Setting Preferences*.

The scanner parameters can either be set on the scanner or downloaded from a Setup file, see Chapter 5 *Setting Scan Parameters*.

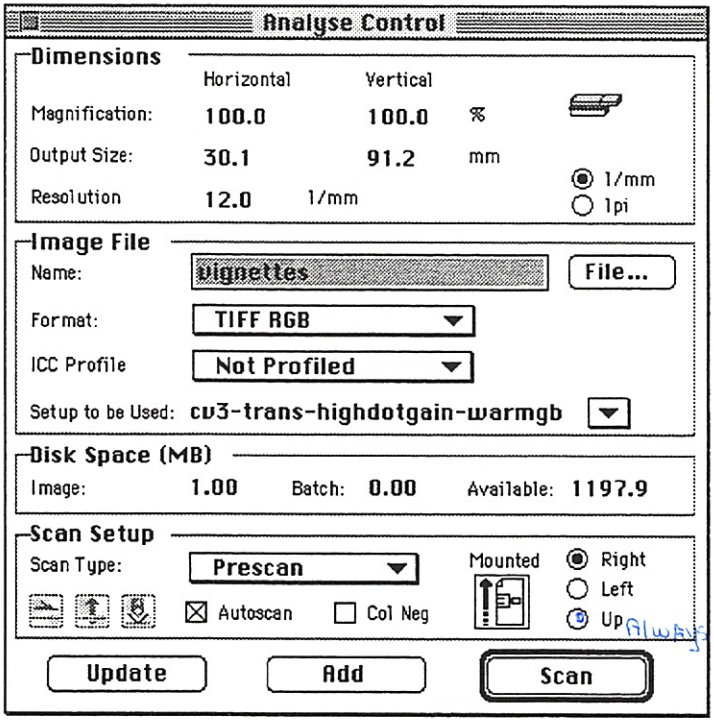
This section describes basic operation of the scanning system.

3.1.1 Setting Up the Macintosh

The Analyse Control window is displayed when the software is started up. The settings displayed are those saved when the system was shut down.

If the Analyse Control window is not displayed, to start a new image scan select **Analyse Control** on the **File** menu.

The Analyse Control window is displayed, see Section 6.2 *Analyse Control* for a full description.



You have the choice of setting up an RGB standard image scan, using ICC Profiles, or using a predefined job setup:

- To perform an RGB standard image scan, choose an ICC profile from the **ICC Profiles** menu.
- To perform a scan using a predefined job setup, choose **Not Profiled** from the **ICC Profiles** menu, then choose the setup you require from the **Setup to be Used** menu. See Chapter 5, *Setting Scan Parameters* for details on the use of Setup files.

To change the format of the scanned image, click on **Format** and drag-select the required format from the list. The formats available will depend on the choices made above. See *Format Summaries* in Section 6.2.6 for details of the formats.

To change the scan type click on **Scan Type** and drag-select the required scan type from the list.

Click on **Add** to add the job to the batch (or **Scan** to start the scan if not scanning from the queue).

3.1.2 Setting Up the Scanner

If necessary the scanner may be used for setting all the scan parameters. At this stage the Macintosh can be ignored as no operations need be performed on it. For details of setting up the scan using this method, refer to the appropriate operator's manual supplied with the scanner.

The Celsis™ application provides full control of all the scan parameters and can be used to set up the scanner, or modify an existing setup. See Chapter 5 *Setting Scan Parameters* for full details.

The orientation of the image when mounted on the scanner drum along with the scanner LatRev setting, affect the orientation of the scanned image when it is subsequently edited on the Macintosh. Ideally, the scanned image should appear upright on the Macintosh screen. See Section 6.2.9 *Changing the Orientation Setting*, for details on how to achieve this.

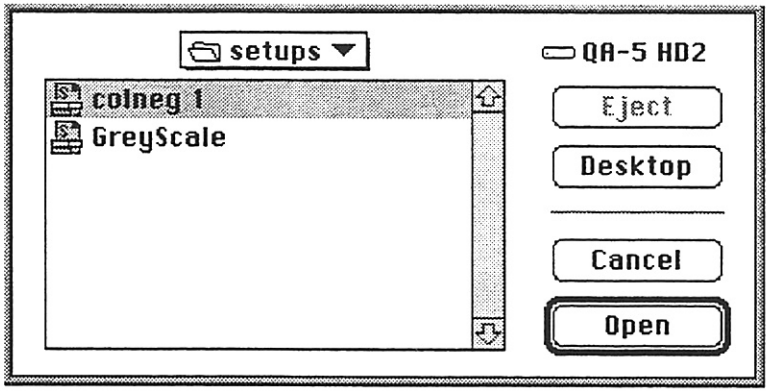
The Macintosh can be used to store Setup Files that contain full or partial sets of scanner data. You can download a scanner Setup File to set the scanner to the previously saved setup.

3.1.3 Retrieving a Stored Setup File

A scanner and image parameter setup can be retrieved from a previously stored Setup file (see Chapter 5 *Setting Scan Parameters)* as follows:

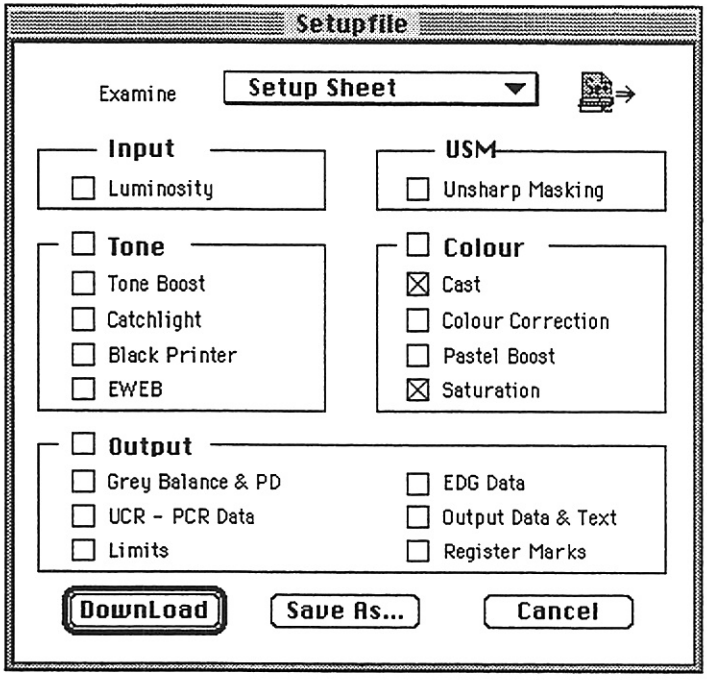
Select **Open Setup** from the **File** menu.

The File Finder window is displayed:



Highlight the Setup file you wish to open and click on **Open**.

The Setup file window is displayed. Click on **Download** to send the settings to the scanner.



Note: Only the functions which are selected (X in the checkbox) will be downloaded to the scanner.

The scanner settings change to those stored in the Setup file. The Analyse Control window (see the section *The Analyse*

Control Window in Section 6.2) can be **updated** with the new settings.

3.1.4 Prescans

To set up a prescan on the scanner the minimum requirement is to set up the image start-and-finish positions.

When the scanner has been set up for a prescan, on the **Analyse Control** window click on **Scan Type** and drag-select **Prescan** from the list.

Click on **Update** to download the scanner settings.

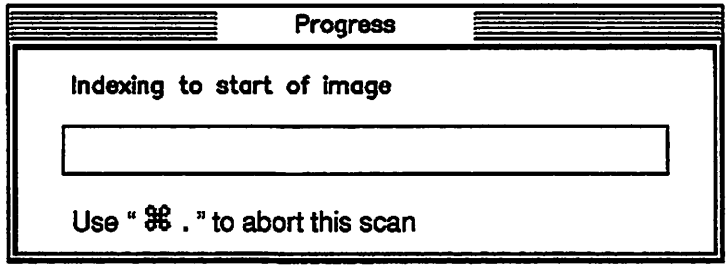
WARNING

Before starting the scan ensure that no one is working on the scanner. Also check that the lid interlocks are operating correctly and have not been defeated. This is because when using the Celsis™ application, remote and unannounced operation of the scanner can occur.

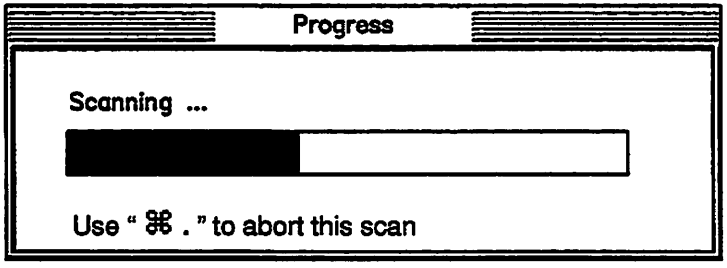
In the **Analyse Control** window click on **Scan.**

Note: Before starting the scan the Macintosh software updates the scanner automatically, so the scan is performed using the latest scanner setup (even if you have changed the setup and not clicked on ***Update****).*

The scanner display shows the message **Progress**. The Celsis™ application displays the following window for a few seconds while the scanner seeks to the beginning of the image:



Then the following window is displayed showing the progress of the scan:



The prescan image will be displayed on the Macintosh as it is scanned if the Prescan Preference, **View while Scanning**, option is selected. See Section 4.4 *Prescan.*

If Autoscan is selected the scanner will complete two scans, the first being an original density capture for the Autoscan calculation and the second the actual scan. The Celsis™ application will display a static status bar between the scans while the calculation takes place.

When storing the image on a device which is slower than a SCSI hard disk (such as an optical disk), a 'backlog' of data will build up on the 300 Mbyte buffer disk. The transfer of this data may still continue after the scanner drum has stopped.

Note: During this time the scanner keyboard should not be used, as doing so may cause the transfer to abort.

Where the Prescan Preference **Save to Prescan Folder** option is selected, the scanned image is saved to the Prescan Folder. See Section 4.4 *Prescan*. The prescan image icon is:

prescan file.pre

3.1.5 HR Scans

To carry out an HR Scan, on the **Analyse Control** window click on **Scan Type** and drag-select the required scan type.

The scan is then carried out as described in Prescans above.

The job data will be saved as a job to the folder specified in the Preferences-General window if **Auto Job Storage** is selected. See Section 4.2.6 *Job Files*. The job file icon is:

Scan Image 1.job

The image will be saved to the folder specified in the Analyse Control window. The image file icon shows the file format, a typical icon is:

Scan Image 1

If Photoshop™ is not present on the Macintosh the file will be a grey sheet.

Scan Image 1

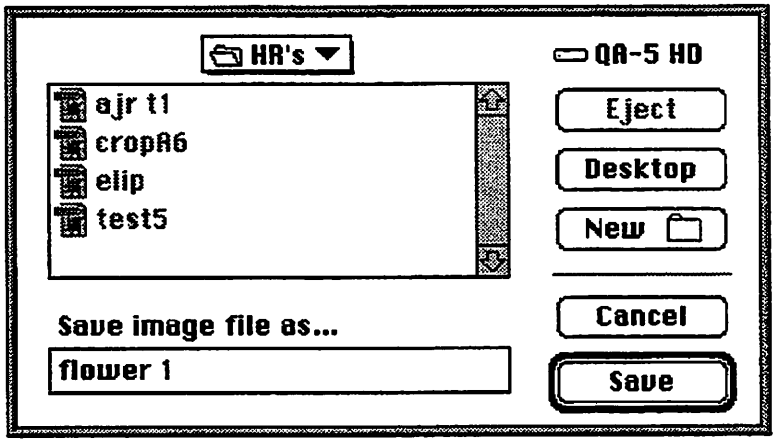
Selecting a Folder and Image Name - Saving as a Job

Until a folder and file name have been defined, the HR Scan will scan to the last used folder and retain the image file name displayed.

To define a folder and file name:

In the **Analyse Control** window click on the **File** button.

A dialogue box is displayed:



Select the required folder and change the file name if required. Click on **Save**.

Note: As files in Crosfield® DDEF formats are intended for export out of the Macintosh environment, there are additional constraints on the file name. The name must have a maximum of eight characters (including any underscores '_'). Any characters typed in after the eight character will be lost when the file is saved, and any illegal characters will be converted to underscores. A three letter suffix will be added to the file name to indicate the DDEF format, and the size of the file.

Save Job As...

If you save and rename a job using **Save Job As** listed under File in the top menu bar, the file name will be changed but not the job/image name. If the new job file is added to the queue, or the Job Sheet opened, the original image name will be displayed.

3.2 Menu Structure

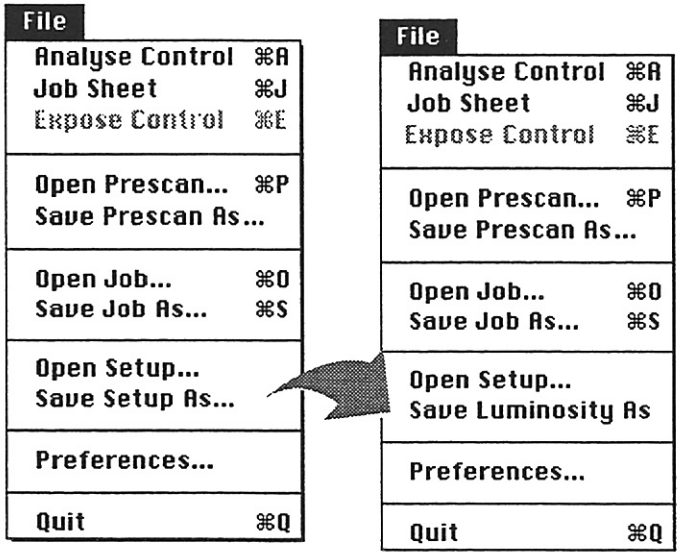
When the Celsis™ application is started on the Macintosh the menu bar at the top of the desktop changes to:

File Edit Image Queue Special

The functions available on each of the menus are described in the following section. Where there is a hot key option this is shown, for example press the ⌘ key and the letter **A** key together to display the Analyse Control window.

3.2.1 File Menu

The File Menu provides access to the functions required to produce and edit the Job File for the currently displayed image or a job highlighted in a Queue. If the Luminosity window is open the **Save Setup As** file function changes to **Save Luminosity As**, to allow the Luminosity data to be stored as a file in the Luminosity folder.



Analyse Control ⌘A

Opens the Analyse Control window to allow you to load a new job in Macintosh software. See Section 6.2 *Analyse Control.*

Job Sheet ⌘J

Displays the Job Sheet window for an image open on the desk top, or a job highlighted in a Queue.

Open Prescan ⌘P

Opens the Prescan window to allow you to select an image file and display the image for editing. See Section 6.3 *Prescan and Image Editing.*

Save Prescan As

Opens the Save As window to allow you to save a Prescan image as a file.

Open Job ⌘O

Opens the file finder to allow you to select a Job File and open the Job Sheet window. See section *Job Sheet* in Section 6.3.4.

Save Job As ⌘S

Opens the Save As window to allow you to save a job as a new file. The function depends on the current mode:

- If the Analyse Control window is active the job currently loaded on the scanner is saved as a new file.

- If the Job Sheet is open, the job which the Job Sheet specifies is saved as a new file.
- If neither the Analyse Control window nor the Job Sheet are active and you highlight a job or jobs in the queue, those jobs will be saved. If more than one job is highlighted you are given the choice of saving individual jobs or saving all the highlighted jobs as a batch.

  Note: If you want to work on a group of saved jobs then select them and drag them to the ***Celsis 6000*** *icon. They will then appear in the queue.*

Open Setup

Opens the file finder window to allow you to open the Setup File. See Section 5.2 *Setup File.*

Save Setup As

Opens the Setup File window from the Analyse Control window or Job Sheet to allow you to select the fields that you wish to save to a Setup File.

Preferences

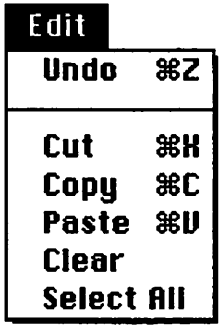
Opens the Preferences - General window to allow you to set the preferences that you require. The *General* sub-menu allows you to access the other five Preference option windows. See Chapter 4, *Setting Preferences.*

Quit ⌘Q

Exits from the Celsis™ application.

3.2.2 Edit Menu

The Edit menu allows you to select and delete jobs when working in batch mode. See Section 6.4 *Queue Control.* Other functions are described below.



The available options are dependent on whichever item is currently active.

Undo ⌘Z

Not available.

Cut ⌘X

Deletes (or cuts) a job from the Queue or text from an edit box.

Take care when cutting jobs in large queues as there could be jobs highlighted but not visible in the window.

Copy ⌘C

Not available.

Paste ⌘V

Inserts previously cut jobs into a Queue before the selected entry, or at the end of the queue if no entries are currently selected. This command can also be used to paste previously cut text into edit boxes.

Clear

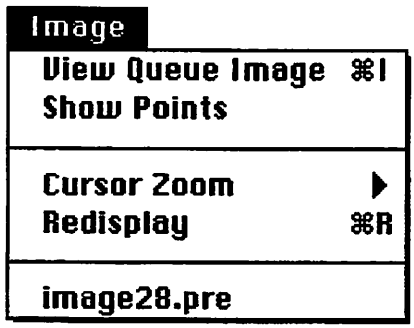
Clears the selected batch in the Queue.

Select All ⌘A

Selects all the jobs in the Queue.

3.2.3 Image Menu

This menu controls all aspects of Image or Job control including Prescan images. Refer to Section 6.3 *Prescan and Image Editing*.



View Queue Image ⌘I

Displays the scanned area for the first job selected in the analyse queue. The HR scan will be displayed if there is one. If there is no HR scan the LR scan will be displayed. If there is no HR or LR scan a warning will appear. The queue entry of the job displayed is automatically deselected so that the next time you choose this command the next selected image will appear.

Show Points

Selects the Sample Points and Show Values windows.

- The Sample Points window allows you to take samples of an image at selected points or display the most saturated points in the image. See the sub-section *Show Points* in Section 6.3.3.
- The Show Values window allows you to read off the CMYK and Original Density values at the pointer. See the sub-section *Show Values* in Section 6.3.3.

Cursor Zoom

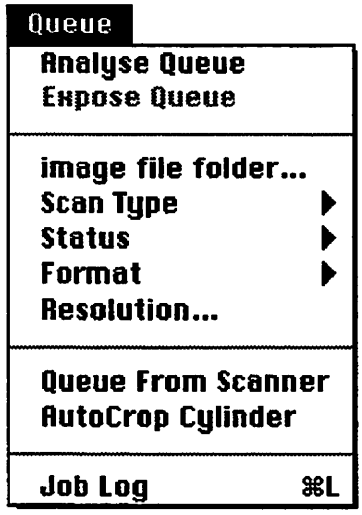
Displays the cursor and localized portion of the image in a zoom mode, either x2 or x4 magnification is selected by a sub-menu.

Redisplay ⌘R

Displays the current prescan image with the applied edits. It is not possible to redisplay HR images.

3.2.4 Queue Menu

This menu allows you to examine and control the Job Queues. See Section 6.4 *Queue Control.*



Analyse Queue

Displays the Analyse Queue window.

Expose Queue

The Expose Queue option is not available with the Celsis™ 5250/6250 (C.A.S.C.) scanner.

Image File Folder

Allows you to change the destination folder for the HR image of a highlighted job or group of jobs in the Analyse Queue. This function will not work if any of the jobs highlighted are currently being scanned.

Scan Type

Displays a sub-menu to allow you to change the scan type of a highlighted job or group of jobs in a queue. This function will not work if any of the jobs highlighted are currently being scanned.

Status

Displays a sub-menu to allow you to change the scan status of a highlighted job or group of jobs in a queue. This function will not work if any of the jobs highlighted are currently being scanned.

Note: It is not possible to perform a change of status on a group of jobs if the current status of all jobs in the group is not the same. For example if some jobs are currently ***Held*** *and others have* ***Failed****, they cannot be changed to* ***Waiting*** *in one operation.*

Format

Displays a sub-menu to allow you to change the format of a highlighted job or group of jobs in a queue. This function will not work if any of the jobs highlighted are currently being scanned.

Resolution

Displays a window to allow you to change the resolution of a highlighted job or group of jobs in a queue. Enter the new resolution in the data box and click **OK**. This function will not work if any of the jobs highlighted are currently being scanned.

Queue from Scanner

Selects the mode which allows the operator to work on the scanner and send jobs back to the analyse queue on the Macintosh. See Section 6.4.2 for more information.

Autocrop Cylinder

The Autocrop Cylinder function initiates a scan of the entire analyse cylinder area. During the scan, each original is identified, a prescan is performed and a job is created. The jobs are automatically given unique names and added to the Analyse Queue.

Job Log

The **Job Log** option displays a log relating to each job highlighted in the Analyse queue.

3.2.5 Special Menu

See Section 6.6 *Special Options*

Select Scanner

Selects the scanner to be connected to the Macintosh.

Release Scanner/Reserve Scanner

Releases the analyse scanner from the control of the Celsis™ application on the Macintosh, or reserves the analyse scanner.

Operation Log

Displays the Operation Log.

Film Safe Screen

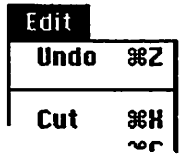
Switches the display to Film Safe colour operation. To turn back to normal re-select **Film Safe Screen**, or click on the desktop.

3.2.6 Keyboard Shortcuts

Keyboard shortcuts are provided with this software to speed up operation. All available shortcuts are listed in the menus alongside the menu options they duplicate. To use the shortcuts:

- Options from the Main menu bar:

  Press and hold down ⌘, then press the shortcut letter for the function you require. For example to select **Cut** from the **Edit** menu, press and hold ⌘ then press **X**.



- Options from the Job Sheet and Setup Sheet menus:

  With the Job Sheet or Setup Sheet window active, press and hold down **[Alt]** (**[Option]** key on some keyboards) and ⌘, then press the shortcut letter for the function you require.

Shortcut options are shown in Figure 3.1. Note that keyboard shortcuts for the options available from the Setup Sheet menu are the same as those on the Job Sheet menu. Until you are familiar

with the shortcuts you may find it useful to copy this page and place it by the system for easy reference.

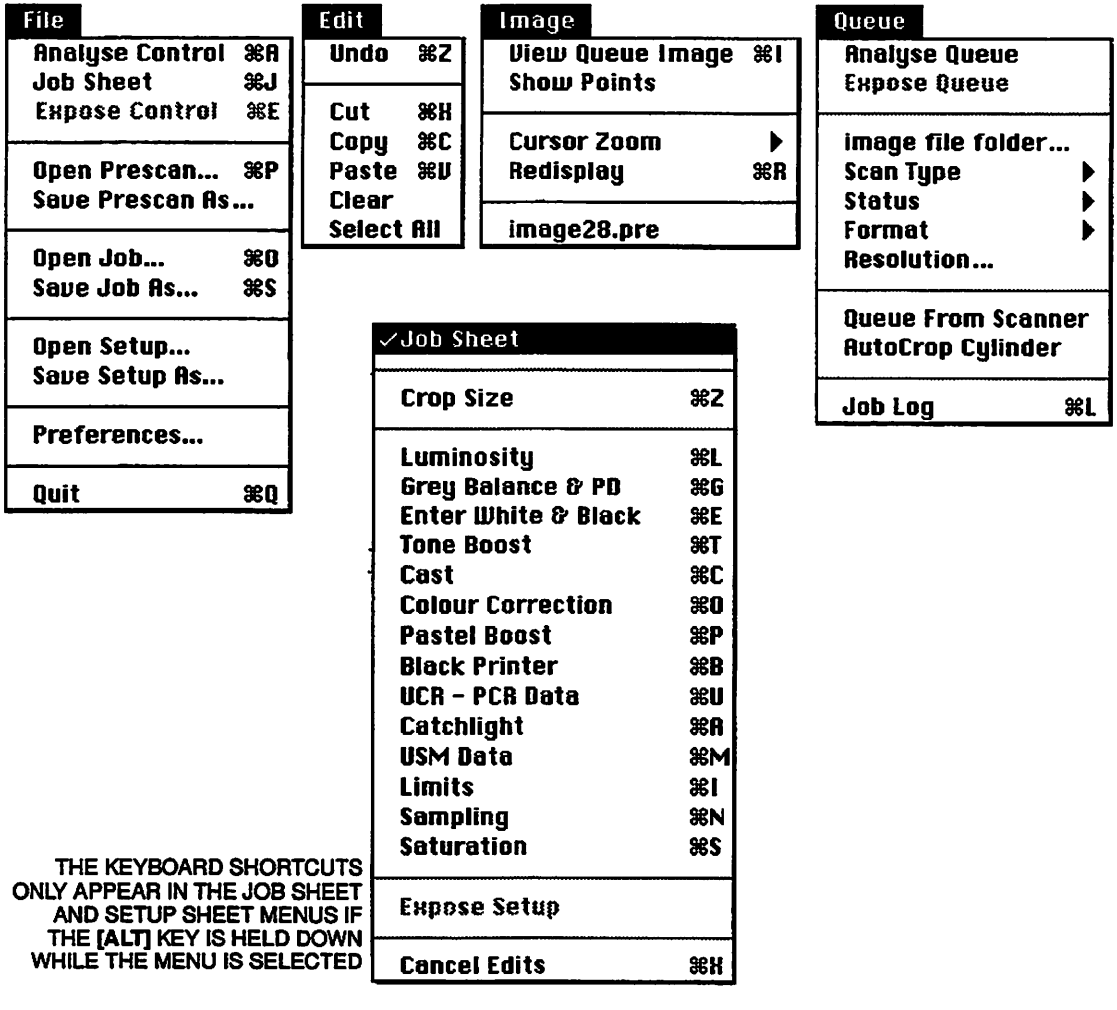


Figure 3.1 Menus showing keyboard shortcuts

TOC

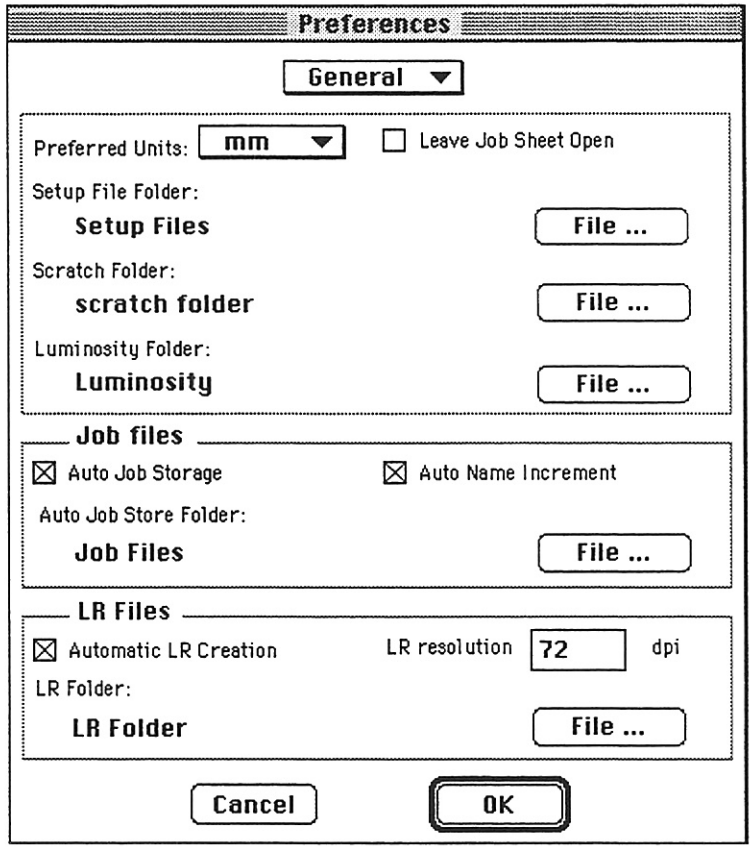
Setting Preferences

4

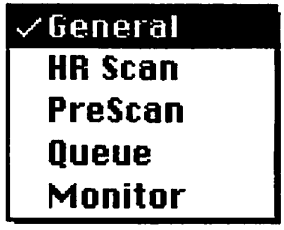
This chapter describes the facilities available in the Celsis™ 5250/6250 (C.A.S.C.) software that allow you to define the way you work with the system.

4.1 Introduction

To define the Preferences that you want to use while working in the Celsis™ application, select **Preferences** from the **File** menu. The General Preferences window is displayed.



You can switch between windows by selecting the **Preferences** sub-menu. The preferences are saved when you exit from the Celsis™ application by clicking **OK** on any of the Preferences windows.

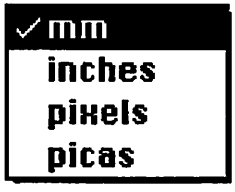


4.2 General

The General Preferences window allows you to set up the application operation, default folders and files to your requirements.

4.2.1 Changing the Preferred Units

To change the units in which the input and output sizes are displayed, select an option from the **Preferred Units** menu



4.2.2 Setup File Folder

Specifies the default folder to be accessed by the Setup menu on the Analyse Control and Job Sheet windows. To select the folder to be used, click on the **File** button. The File Select window is displayed. Select an existing folder, or select **New Folder** and type in the name, then click on **Create**. Click on **Select** to confirm your selection.

When the pull-down menu in the Job Sheet and Analyse Control window is next selected, the Setup files in the selected folder will appear. The Job Sheet may need to be closed and re-opened to respond to the change in the Setup File folder.

4.2.3 Scratch Folder

The Scratch folder is used by the application as a hard back-up for items in application memory. **These items must not be deleted or moved while the application is running.**

To select the folder to be used, click on the **File** button. The File Select window is displayed. Select an existing folder, or select **New Folder** and type in the name, then click on **Create**. Click on **Select** to confirm your selection.

4.2.4 Luminosity Folder

Luminosity files, created in the Luminosity window are automatically stored in the folder specified here. Select an existing folder, or select **New Folder** and type in the name, then click on **Create**. Click on **Select** to confirm your selection.

4.2.5 Leave Job Sheet Open

Allows multiple edits to be done on one job sheet. This is especially useful when group scanning images. It may be beneficial to use Autoscan (see Section 4.4) while group scanning.

The Job Sheet and prescan will remain on the screen while individual images are cropped and added to the Analyse Queue. These images can be added as prescans or HR Scans.

Each job must be renamed before it is added to the batch.

Once all the jobs have been cropped the **Leave Job Sheet Open** checkbox must be deselected.

4.2.6 Job Files

Select **Auto Job Storage** to save Job Files automatically to the Auto Job Store Folder.

If **Auto Name Increment** is selected an automatically incremented serial number is added to the Job/Image file name when it is added to the queue from the Analyse Control window (or from the Job Sheet if **Leave Job Sheet Open** is also selected).

The **Auto Job Store:** field displays the folder currently selected to automatically store jobs. To change the folder to be used click the **File** button. The File Select window is displayed. Select an existing folder, or select **New Folder** and type in the name, then click on **Create**. Click on **Select** to confirm your selection.

4.2.7 LR Files

Select **Automatic LR Creation** to create a low resolution copy for each image that is scanned. The LR image will be of the same file type as the HR image, except for:

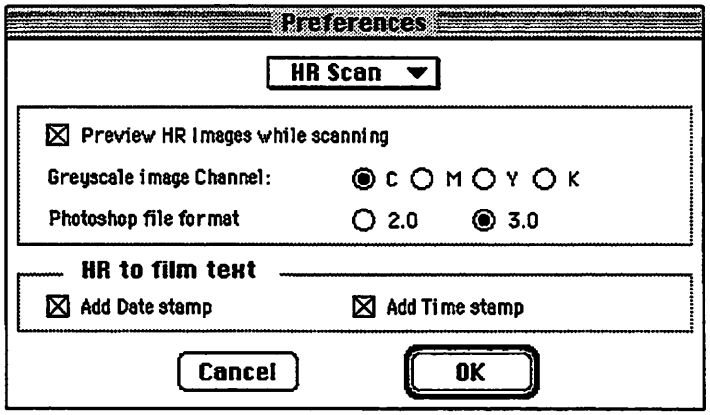
- The LR image associated with any CMYK HR formats will be created in the appropriate RGB format.
- The LR image associated with the Scitex CT HR format will be created in EPSF CMYK format. The name of these LR files will have an extension, '.e' rather than the usual '.LR'.

In the **LR Resolution** data box type in the resolution required for the LR image. The LR files are used in DTP applications such as QuarkXPress.

Select the folder to be used for the LR Folder. Click on the **File** button. The File Select window is displayed. Select an existing folder, or select **New Folder** and type in the name, then click on **Create**. Click on **Select** to confirm your selection.

4.3 HR Scan

The HR Scan Preferences window allows you to select scanning options.



4.3.1 Preview HRs while Scanning

Select this checkbox if you require to preview HR images while they are being scanned. This function is not available when scanning images in the queue.

4.3.2 Greyscale Image Channel

Select the appropriate button for the preferred channel. This will select the colour channel from which greyscale and bit map scans are generated.

4.3.3 Photoshop™ File Format

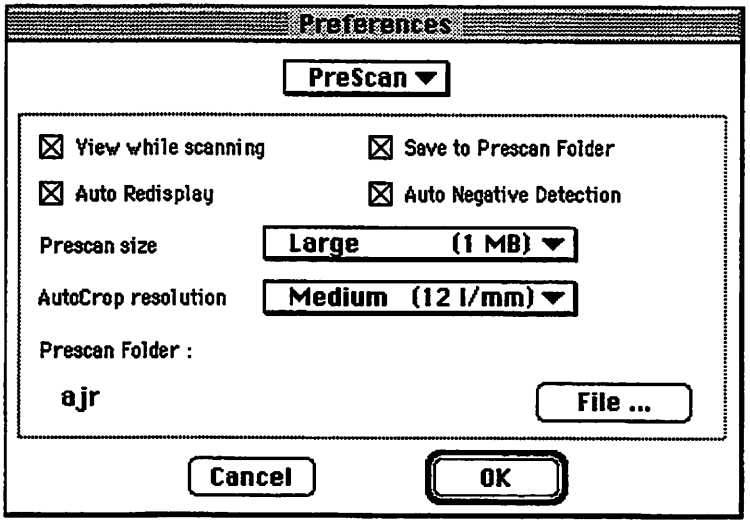
Select the button for the appropriate format.

4.3.4 HR to Film Text

This function has no use with this scanner configuration. It does not matter which settings are chosen.

4.4 PreScan

The PreScan Preferences window allows you to select the prescan resolution and prescan options.



4.4.1 View Prescans while Scanning

Select the **View while Scanning** checkbox if you want to view the prescan image to be displayed as it is scanned. This is not available when scanning images in the Queue.

4.4.2 Save to Prescan Folder

Select the **Save to Prescan Folder** checkbox if you want to save prescan images in the Prescan Folder.

4.4.3 Auto Redisplay

Select the **Auto Redisplay** checkbox to add Enter White and Black and other CV corrections to the displayed prescan image.

Note: An original density scan will be displayed if this is turned off.

It is recommended that this function be selected. It will produce the best results under most circumstances.

4.4.4 Auto Negative Detection

With this checkbox checked, colour negative originals are automatically detected by Autoscan and there is no need to select **Col Neg** in the Analyse Control window each time a colour negative is to be scanned.

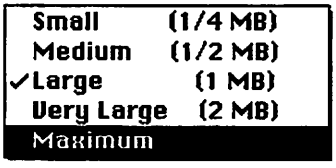
When performing single scans the images will appear in positive form on the colour monitor if **Auto Redisplay** is also selected in the Prescan Preferences. Otherwise the image will appear in original density form and to see it in positive form you will need to re-display the image using the **Redisplay** option from the **Image** menu.

When performing an Autocrop scan the response to Auto Negative Detection will depend on the proportion of negative originals present. See Section 6.5.6, *Autocrop Prescan Images.*

It is recommended that this function be selected. It will produce the best results under most circumstances.

4.4.5 Prescan Size

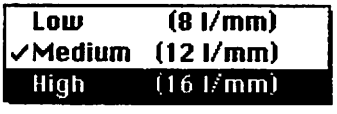
The Prescan Size options are displayed on the window. Select from the pull-down menu to specify the size required. The selection made here will determine the size of the image when it is later displayed on the colour monitor.



The **Large** Prescan Size requires 1 Mbyte of memory and is the largest image which can be copied to a floppy disk.

The **Maximum** Prescan Size is sized to display the largest complete image the screen will allow and gives the best resolution with which to view corrections made to the prescan.

4.4.6 Autocrop Resolution



This menu allows you to select the resolution at which an Autocrop is performed. The optimum selection will depend on the smallest size of original which you are scanning and the prescan size selected from the **Prescan Size** menu.

- If you choose a coarse resolution and a large image size when scanning a small original (a 35 mm transparency for example) the display you obtain will appear unsharp due to the high level of interpolation required to generate the additional lines of pixels.

  In extreme cases the maximum possible interpolation will be exceeded and the system will automatically choose a smaller image size than the one you chose.

- If you choose a resolution which is too fine, the time taken to perform the Autocrop will be unnecessarily long.

The following table indicates the optimum Autocrop resolution which should be selected to obtain sharp prescan images on the colour monitor:

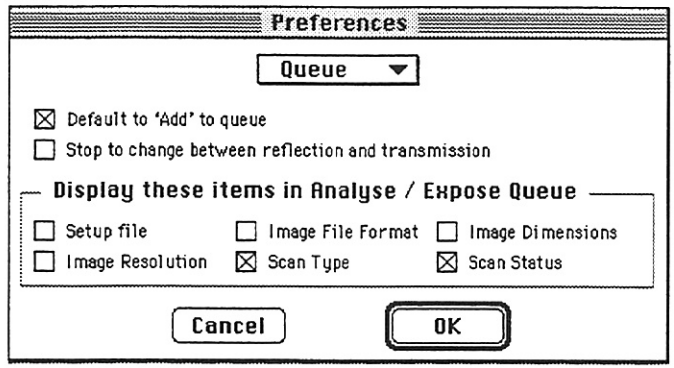
Smallest Original	Image Size Chosen			
	Medium	Large	Very Large	Maximum
35 mm	8/12	12/16	16	-
60 x 60 mm	8	8	12	16/16
5 x 4 inch	8	8	8	8

4.4.7 Prescan Folder

The Prescan Folder is selected by clicking on the **File** button. The File Select window is displayed. Select an existing folder, or select **New Folder** and type in the name, then click on **Create**. Click on **Select** to confirm your selection.

4.5 Queue

The Queue Preferences window allows you to set the Queuing mode and set up the items that you want to display in the Queue windows.



4.5.1 Default to 'Add' to Queue

When selected, **Default to 'Add' to queue** makes the **Add to Queue** button on the Analyse Control and Job Sheet windows the default button.

4.5.2 Stop to Change Between Reflection and Transmission

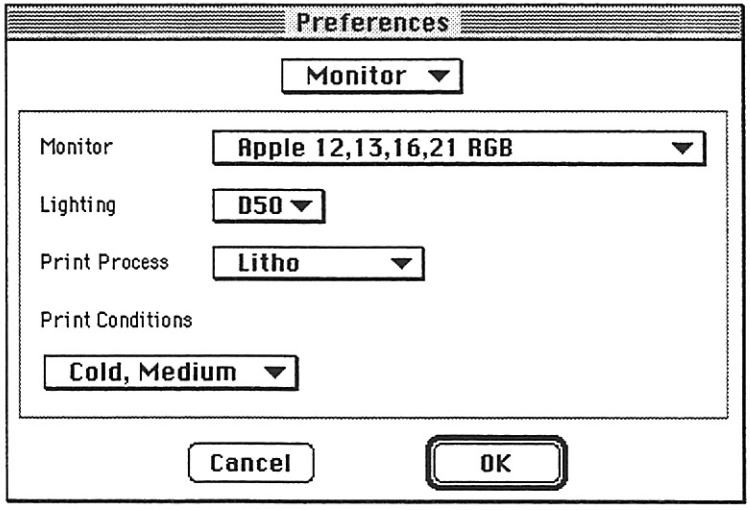
Batch scans which include transmission and reflection copy must be stopped when moving from one type to the other so that the scanner optics can be changed. With this box checked, the stop will be automatic.

4.5.3 Display Items

Select the checkboxes for the items that you want to display in the Queue window.

4.6 Monitor

The Monitor Preferences window allows you to select the type of monitor in use. You can also select the lighting conditions for your monitor location and press press characteristics.



4.6.1 Monitor Selection

The choice made from **Monitor Type** allows the system to correct for the phosphor-dot type which is used by your monitor so that the image will match the printed result. There are two phosphor types, P22 and EBU. To make the choice easier a list of monitors has been provided. By choosing the monitor you are using the correct phosphor will be selected.

Sometimes you can obtain a better match between the colour monitor and the printed result with the opposite choice. This is because many monitors do not match the P22 and EBU standards exactly.

Note: If Monitor Preferences (and display calibrator settings where used) are not set the same on all monitors in an installation, you will see differences between the monitors when using the same setup.

4.6.2 Lighting

Select from either:

- D50 for a colour temperature of 5000 K, this corresponds to room lighting conditions.
- D65 for a colour temperature of 6500 K, this will appear colder or blueish.

4.6.3 Print Process/Print Conditions

Select the appropriate Print Process for your site requirements from the list. The selection works together with the Print Conditions to allow you to select the optimum setting for your monitor so that it matches the results obtained on the printing press.

If you are outputting profiled RGB images, choose **RGB Profile** from the **Print Process** menu. No correction for print process or print conditions will be made.

If you are not outputting standard RGB images, choose the printing process which is to be used (**Flexo, Gravure** conversion, **Litho** or **News**paper), two grey balance conditions (**Cold** or **Warm**) and three levels of dot gain (**Darker, Medium** and **Lighter**). Six special setups are provided for monochrome (**Grey Scale**) and a further setup is provided for **RGB** non-profiled images.

It is recommended that you try the file which most closely describes the output conditions for which the separations are

being prepared. However, setup files labelled **Litho**, **Flexo**, **News** and **Gravure** are not necessarily restricted to the process by which they are named. They may prove to be useful for quite different applications.

If you are not certain which to choose, try **Litho Warm Medium** or **Litho Warm Lighter**. Some further description of each file is provided at the end of this section.

1. Select three or four sharp transparencies which include features such as neutrals of varying lightness, a good distribution of colours of varying hue and lightness, regions of highlight and shadow detail and some high contrast edges. **Do not be tempted to make a decision on a single result.**

2. Scan these images using the setup file you have just chosen and proof or print the results.

3. Assess the results for acceptable quality. If they are not entirely satisfactory, decide what is wrong. Is the result too dark or light, or too warm or cold?

   Some notes are provided in the following tables which may help you to select the most appropriate file.

4. Select another file which improves these features and repeat the tests with the transparencies which best reveal the problem. Repeat the process until the best results are obtained.

The file you have chosen can now be selected each time you perform a preview scan.

System Setup Files	Summary of Characteristics
Litho Cold Darker Litho Cold Medium Litho Cold Lighter Litho Warm Darker Litho Warm Medium Litho Warm Lighter	This family of files is intended for typical litho printing characteristics. They provide for four levels of dot gain and two grey balance conditions. • The **Darker** files are intended to compensate for very sharp printing conditions producing low dot gain. When compared with a 50% dot created by the **Litho ... Medium** option, this file produces a dot which is 7% higher. • The **Medium** files are intended for an average dot gain of about 15 to 18% on coated paper and 18 to 21% on reasonable quality uncoated paper. • The **Lighter** files are intended to compensate for fuller printing conditions producing high dot gain. When compared with a 50% dot created by the **Litho ... Medium** option, this file produces a dot which is 7% lower. • The **Cold** files produce slightly colder neutrals. With a 50% Cyan dot, a neutral tone will be printed with 37% Magenta and Yellow. These files are suitable for processes with a colder grey balance or in cases where a colder result is preferred. • The **Warm** files produce slightly warmer neutrals. With a 50% Cyan dot, a neutral tone will be printed with 40% Magenta and 42% Yellow. These files are suitable for processes with a warmer grey balance or in cases where a warmer result is preferred.
Flexo Cold Darker Flexo Cold Medium Flexo Cold Lighter	This family of files have been created for typical flexo conditions: • The **Darker** file produces a dot which is suitable for very high dot gain. When compared with a 50% dot created by the **Litho ... Medium** option, this file produces a dot which is 18% lower. With regard to grey balance, at 50% Cyan dot, a neutral tone will be printed with 42% Magenta and 40% Yellow. • The **Medium** file produces a dot which is suitable for high dot gain. When compared with a 50% dot created by the **Litho ... Medium** option, this file produces a dot which is 15% lower. With regard to grey balance, at 50% Cyan dot, a neutral tone will be printed with 42% Magenta and 40% Yellow. • The **Lighter** file produces a dot which is suitable for low dot gain. When compared with a 50% dot created by the **Litho ... Medium** option, this file produces a dot which is 8% higher. Grey balance is significantly different with this file. With a 50% Cyan dot, neutral tone will be printed with 39% Magenta and 33% Yellow. The colour correction for these **Flexo ...** files is a little different to the **Litho** set. They produce greener yellows, yellower reds and redder blues.

System Setup Files	Summary of Characteristics
News Cold Darker News Cold Medium News Cold Lighter	This family of files is intended for typical newspaper printing characteristics. They provide for three levels of dot gain. • When compared with a 50% dot created by the **Litho ... Medium** option, the **Darker** file produces a dot which is 15% lower. (Similar to **Flexo Cold Medium.**) • When compared with a 50% dot created by the **Litho ... Medium** option, the **Medium** file produces a dot which is 8% lower. • When compared with a 50% dot created by the **Litho ... Medium** option, the **Lighter** file produces a dot which is also 8% lower but has differences in the quarter and three-quarter tones. It is 5% lower in the quarter tones and 5% higher in the three-quarter tones. Grey balance for this family of curves is close to the 50% Cyan, 42% Magenta and 40% Yellow. Colour correction, when compared with **Litho** files increases the yellow in greens, increases the redness of reds and blues.
Gravure Cold Medium	This file is intended for the creation of litho positives which are to be used in a conversion process to produce gravure printing surfaces. With regard to grey balance, at 50% Cyan dot, a neutral tone will be printed with 42% Magenta and 40% Yellow. The tone characteristics are similar to the **Litho ... Medium** file in the highlight and shadow regions but are 7% lower in the midtones. Colour correction is a little different to the **Litho** set. It compensates for higher colour strength and slightly different hue and lightness. There will be less yellow in greens, less red in magentas and more yellow in reds. In many cases the **Litho** family of files may produce better results and so should be considered as an alternative.
Saturated Cold Medium	This file has been prepared for the highly saturated inks commonly found in Japan. It is otherwise similar to the **Litho Cold Medium** file.
Grey Scale Cold Medium	This file is used when a monochrome image is required from a colour original. The gradation is set up for normal dot gain.
RGB Cold Medium	This file is used for all Jobs which are to be output in RGB format. The gradation is more linear than the CMYK format files and no grey balance is applied.
Waterproof Cold Medium	This file provides the negative characteristics for use when outputting images to the Du Pont Waterproof pre-proofing system.

Setting Scan Parameters 5

This chapter describes the facilities available in the Celsis™ application for setting and adjusting the scanner parameters.

5.1 Introduction

The Job Sheet is used to define the parameters used by the scanner when scanning an image. Many of the parameters may be saved in a Setup file which is effectively a Customer Value (CV) file similar to those used on the scanner. Setup files can be created and saved in folders, recalled as required and used in conjunction with the Job Sheet to set scan parameters.

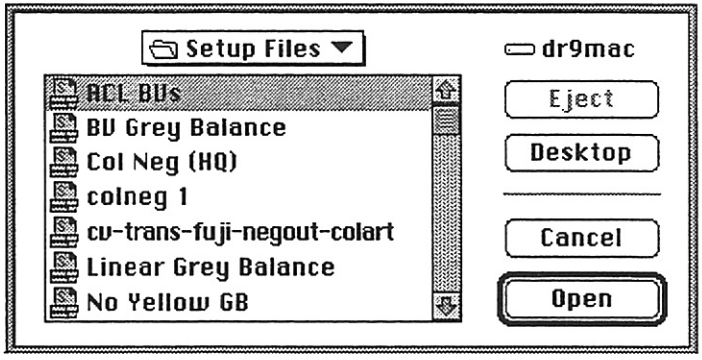
The Setup file folder that is specified in the Preferences - General window (see Chapter 4) may be accessed by the Analyse Control and Job Sheet windows to provide the list of Setup files available in the pull-down menu, see Section 6.2.

The pull-down menu of the Job Sheet is, with the exception of Cropping and Cancel Edits, duplicated by the pull-down menu of the Setup Sheet, therefore both pull-down menus will be dealt with in Section 5.2.

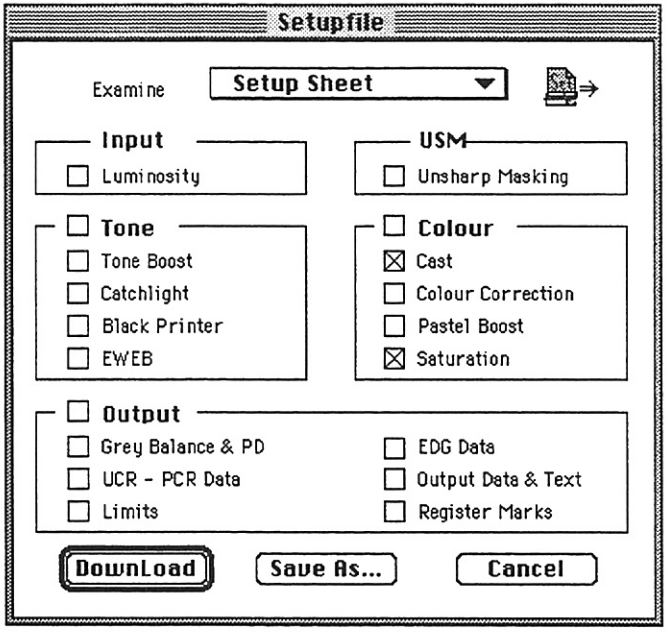
Those aspects of the Job Sheet not covered in Section 5.2 are covered in Section 6.3 *Prescan and Image Editing*. An illustration of the Job Sheet is provided in Section 6.3.4.

5.2 Setup File

To access a Setup file on the desk top menu bar select the **File** Menu. On the **File** Menu select **Open Setup**, the file finder window is displayed.



Select the folder and then the file required. Click on the **Open** button, the Setup File window will be displayed.



The Setup file window allows you to select the setup parameters that you want to change and then download to the scanner.

Individual setups can be saved as setup files using the **Save As** button for use later.

You can use the **Setup Sheet** pull-down menu to select an item and examine the data fields. The data can be adjusted as required and saved. The Setup file can be downloaded to the scanner, this will change the settings for the next scan. Changes to the Setup file can be overwritten in the file or saved as a new Setup file.

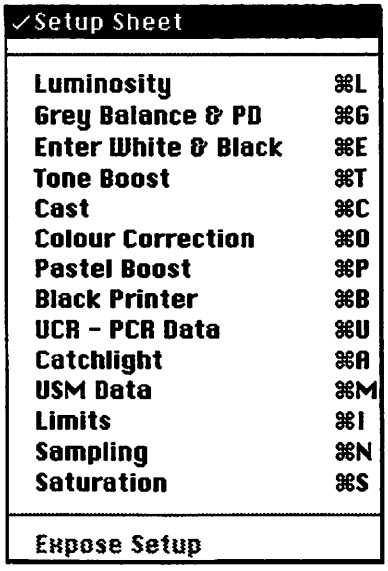
To download the changes to the scanner, on the Setup File window select the checkbox(es) corresponding to the changed fields, then click on the **Download** button. The changed data for the selected scan parameters then overwrites the data in the scanner.

To save the setup from the scanner / Job Sheet, first select the Analyse Control window or Job Sheet, then select the File Menu on the desktop menu bar. On the File Menu select **Save Setup As** and the Setup File window will be displayed. As in the previous example, the data can be adjusted as required and saved or downloaded to the scanner.

5.3 Setup Sheet

The **Setup Sheet** pull-down menu allows you to select the scan parameters and examine the data fields on the displayed window. You can make any changes to suit your requirements, then click on the **OK** button to save the changes and exit from the window.

Select **Setup Sheet** from the **Examine** menu. The Setup Sheet pull-down menu is displayed.



The keyboard shortcuts only appear in the Job Sheet and Setup Sheet menus if the **[alt]** key is held down while the menu is selected.

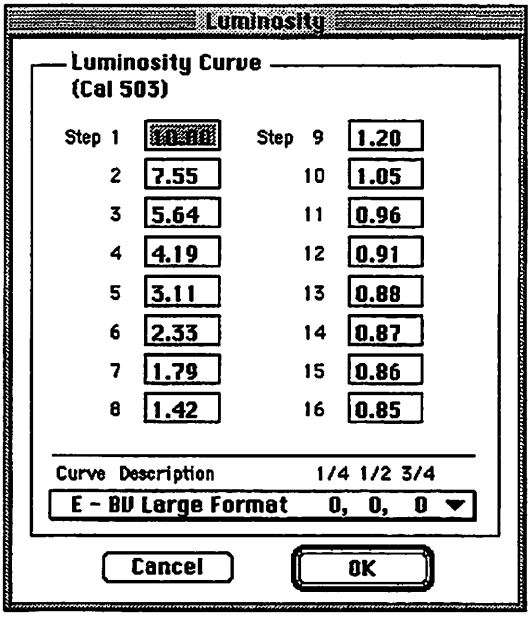
If an ICC profile has been selected for the current job, edits will not normally be required. To prevent accidental changes this menu is dimmed when ICC profiles is selected and the functions can only be accessed if the **Override** box is checked.

Note: The Setup Sheet pull-down menu is the same as the Job Sheet menu except for the omission of **Cancel Edits** *and* **Crop Size**. *These are only available from the Job File menu and are covered in Section 6.3.1. The* **Expose Setup** *function is not available with this scanner.*

The remaining sections of this chapter describe the functions obtained from the pull-down menu.

5.4 Luminosity

The Luminosity window displays the values for the Luminosity Curve. A set of pre-defined luminosity curves is accessed by a pull-down menu on the window. The settings can be altered to your particular requirements.



When luminosity values have been changed it is nearly always necessary to adjust colour correction values.

An additional function to allow predefined **Luminosity Curves** to be selected and used from the pull-down menu is included.

User Defined	
A - Darkest Originals	-6, -12, -16
B - Darker Originals	-4, -9, -10
C - Dark Originals	-3, -6, -7
D - 35mm, 6x6cm	+1, 0, -5
✓E - BV Large Format	0, 0, 0
F - Inc. HL&MT Detail	+3, +4, 0
G - Inc. HL&MT Detail	+6, +6, 0
H - Light Originals	+4, +5, +4
I - Lighter Originals	+8, +14, +8
J - Reflection 1	-2, -3, -2
K - Reflection 2	0, 0, 0
L - Col Negative	- - -

The pre-defined curves available are:

- **A-C Dark Originals**: used to enhance under-exposed/dark transparencies.
- **D 35 mm, 6 x 6 cm**: used to adjust the curve for 35 mm or 6 x 6 cm originals.
- **E BV Large Format**: used to adjust the curve for large format originals.
- **F, G Inc. HL&MT Detail**: used to improve the detail in highlight and mid-tone areas in light coloured subjects.
- **H, I Light Originals**: used to compensate for the lack of tone in over-exposed subjects.
- **J, K Reflection**: used for correcting transparencies obtained from original colour print.
- **L Col Negative**: used for correcting transparencies obtained from original colour negative.

The deviations from the standard values for the $^1/_4$, $^1/_2$ (M/T) and $^3/_4$ points on the curve are shown on the pull-down menu. If any of the luminosity curve values are modified, the tone curve will automatically be recalculated for both Enter White and Enter Black.

5.4.1 Saving Luminosity Data

When luminosity settings have been changed they can be saved as a file in two ways:

- They can be saved as part of a Setup file in the same way as other setups.
- A Luminosity file can be created and saved in the Luminosity folder. The file will then be added to the list of pre-defined Luminosity setups as viewed from the menu in the Luminosity window.

  The pre-defined Luminosity files, supplied with the system, are stored elsewhere. They will not be seen in the Luminosity folder.

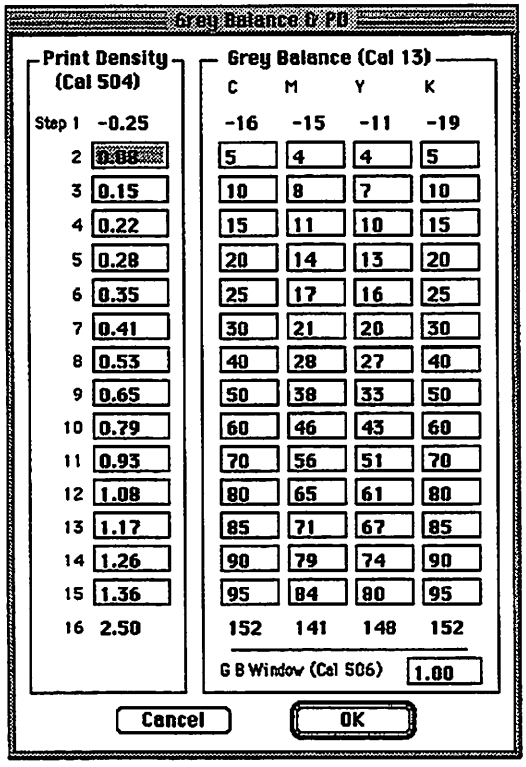
To create a new Luminosity file:

1. Open the Luminosity window and edit any existing file. Do not close the window at this time.
2. Choose **Save Luminosity As** from the **File** menu.
3. Enter a file name and click **Save**. The file will be saved to the Luminosity folder and will appear in the Luminosity file menu in the Luminosity window when next viewed.

*Note: If you open a Luminosity file, using **Open Setup File**, you will see that it appears as a Setup file but with only the Luminosity edit checked.*

5.5 Grey Balance and Print Density

The Grey Balance and Print Density window displays the values for the Print Density curve and the cyan (C), magenta (M), yellow (Y) and black (K) Grey Balance curves.



CAUTION

Do not alter the Print Density and Grey Balance values unless you are familiar with these functions.

5.5.1 Grey Balance

A basic requirement of colour printing is to reproduce greys using Cyan, Magenta and Yellow inks. Three colour overprints of equal dot % values will usually produce brown, not grey. To reproduce grey the values for the scale have to be adjusted or 'grey balanced'. The extent of balancing required depends on the inks, press and paper used. This problem may not occur in gravure printing as the inks used can be balanced.

Procedure for Setting Grey Balance

This section describes the procedure required to obtain your own grey balance data and enter it in the Grey Balance and PD window. The data will only be valid for any one set of printing/proofing conditions. Any change to the conditions will have an effect on grey balance and re-calibration will be necessary using the same procedure.

This data is obtained by outputting the grey-balance test-forme through each printing process. The grey-balance test-forme consists of a set of separation positives. These separations are used to produce printing plates which are then proofed using standard proofing conditions.

This section describes the procedures which must be performed to obtain the data required.

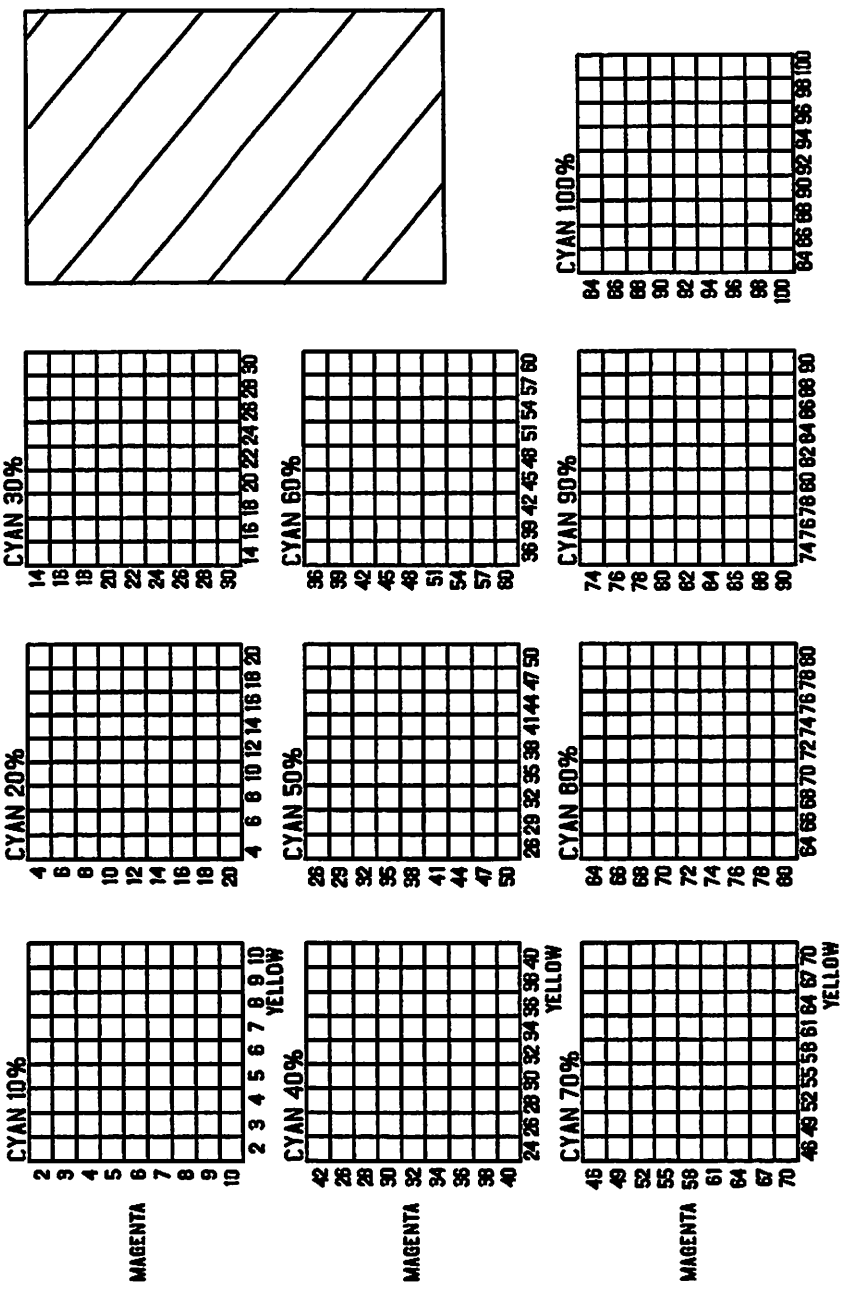


Figure 5.1 Grey balance test forme

The Grey Balance Test Forme

The test forme is divided into two parts. One part consists of 10 blocks, each having a constant Cyan dot with varying Magenta and Yellow. This is the part of the test forme for grey-balance assessment.

Each block is divided into 81 separate areas by a grid printed in black ink. The purpose of this is to act as a neutral reference and is designed to have a density approximately the same as the neutral area formed by the three colour overprint. If the two are identical the three-colour grey and that produced by the Black ink will be virtually indistinguishable from a reasonable viewing distance. This will then produce a simple reference as to which area is a three-colour neutral.

The grey balance is determined by choosing an area within each block which produces the closest to a visual neutral. It should be assessed under standard viewing conditions. Generally, individual observers disagree on the precise area because by its nature the proof has an array of areas all very close to neutral. However, the disagreement is rarely significant. If more than one observer makes the assessment an 'average' of their results may be used.

Grey Balance Set-up Procedure

Once the proof of the test forme has been obtained the set-up procedure for grey balance is performed:

1. Note the Cyan values from the **Grey Balance (Cal 13)** data in the Grey Balance & PD window.
2. Begin the construction of a grey-balance graph by entering these values on the vertical axis and drawing the diagonal line at a convenient angle, as shown in Figure 5.2.
3. Next, draw horizontal lines from each CAL 13 value until they reach the diagonal line, then project them vertically until they cross the horizontal axis. Label the points of intersection of each of the 16 greyscale steps. Greyscale Step 9 is shown as an example.

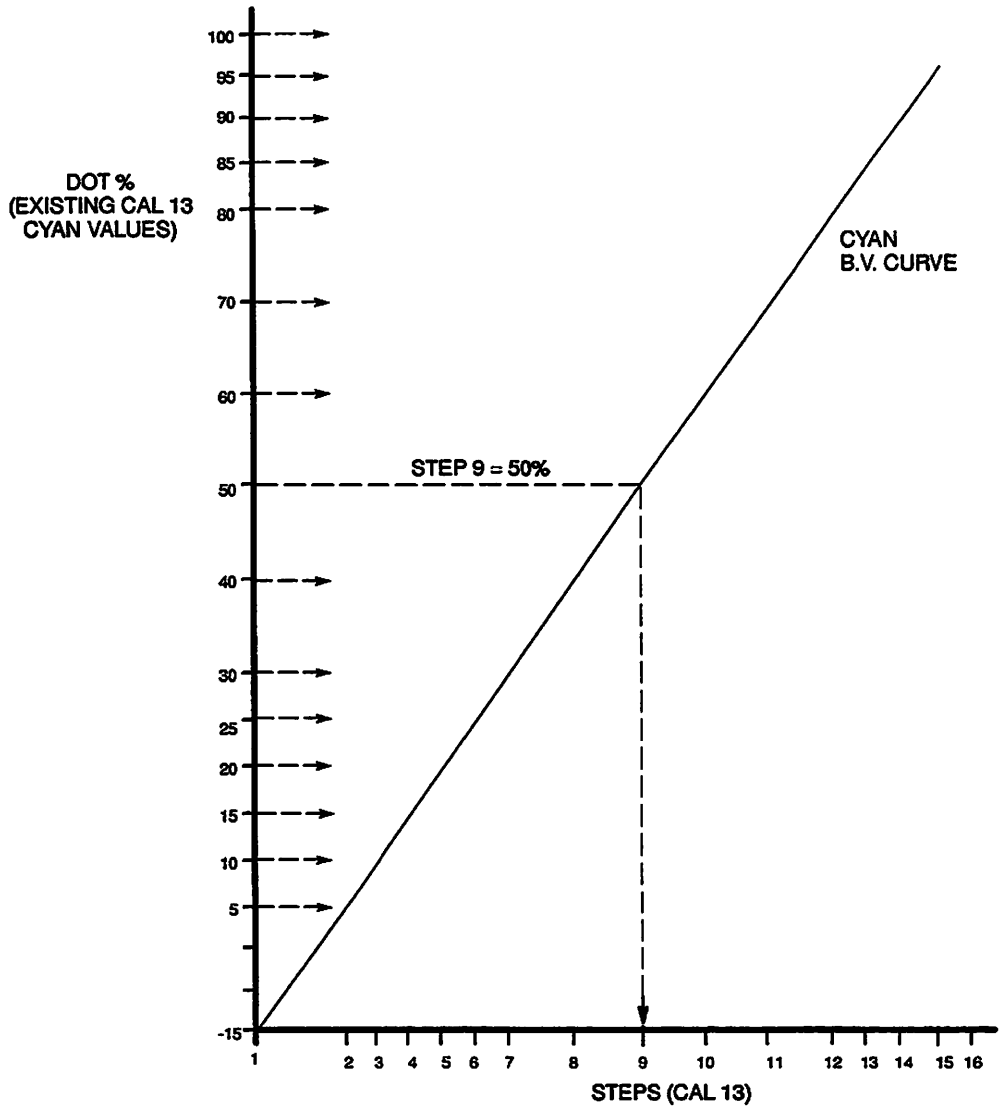


Figure 5.2 Creating the grey balance graph

4. Examine the proof under 5000 K lighting, and from each of the ten blocks select and note a square which is most neutral in appearance (see Grey Balance Test Forme, Figure 5.1).

Note: This proof will also be used to calculate the Print Density values in Section 5.5.3 and may be used to calculate the PCR Additivity Factor 1 in Section 5.12.5. Do not discard it.

5. For the ten squares thus selected, record the dot % values of the cyan, yellow and magenta. A properly calibrated densitometer must be used to measure the exact values from the originally supplied separations, since the values shown on the test form illustration are approximate.

6. You can now create the magenta and yellow curves by plotting the dot % values for each neutral square.

7. For each block:

   a) Mark the cyan dot % on the vertical axis and project a line horizontally until it crosses the Cyan BV diagonal. Then project it vertically towards the horizontal axis.

   b) On this vertical line, mark the magenta and yellow dot % values.

   An example for neutral square 4 is shown in Figure 5.3.

8. When all data from the neutral blocks have been entered, draw a smooth curve through all magenta points, then all yellow points.

9. From the yellow and magenta curves thus produced, read off the corresponding dot % for the 14 greyscale steps (2 to 15 inclusive). An example for Greyscale Step 11 is shown in Figure 5.4.

10. Enter the magenta and yellow dot % values in the appropriate CAL 13 data boxes in the Grey Balance & PD window. Entries must be in the range of -10 to 110.

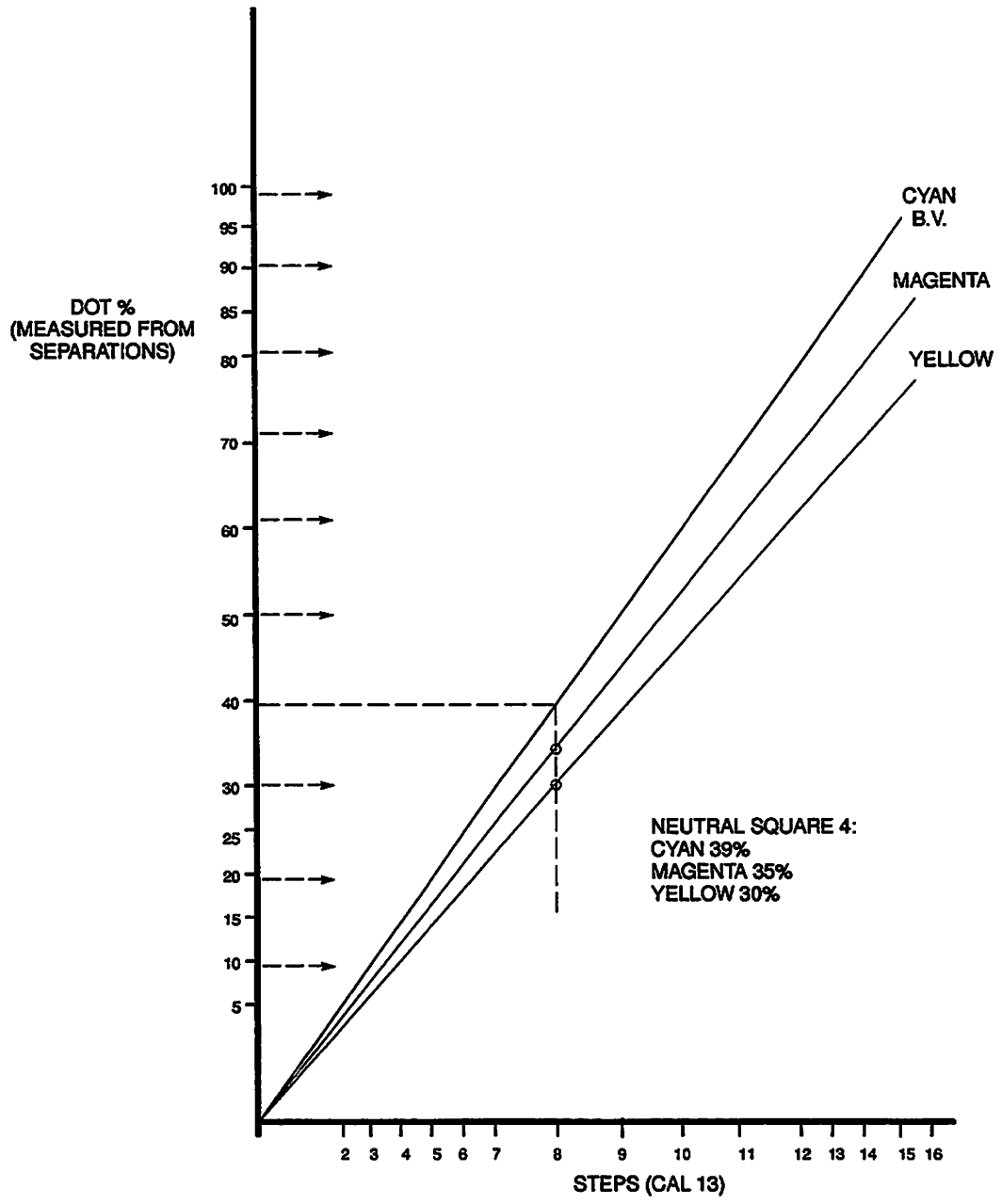


Figure 5.3 Plotting the magenta and yellow curves

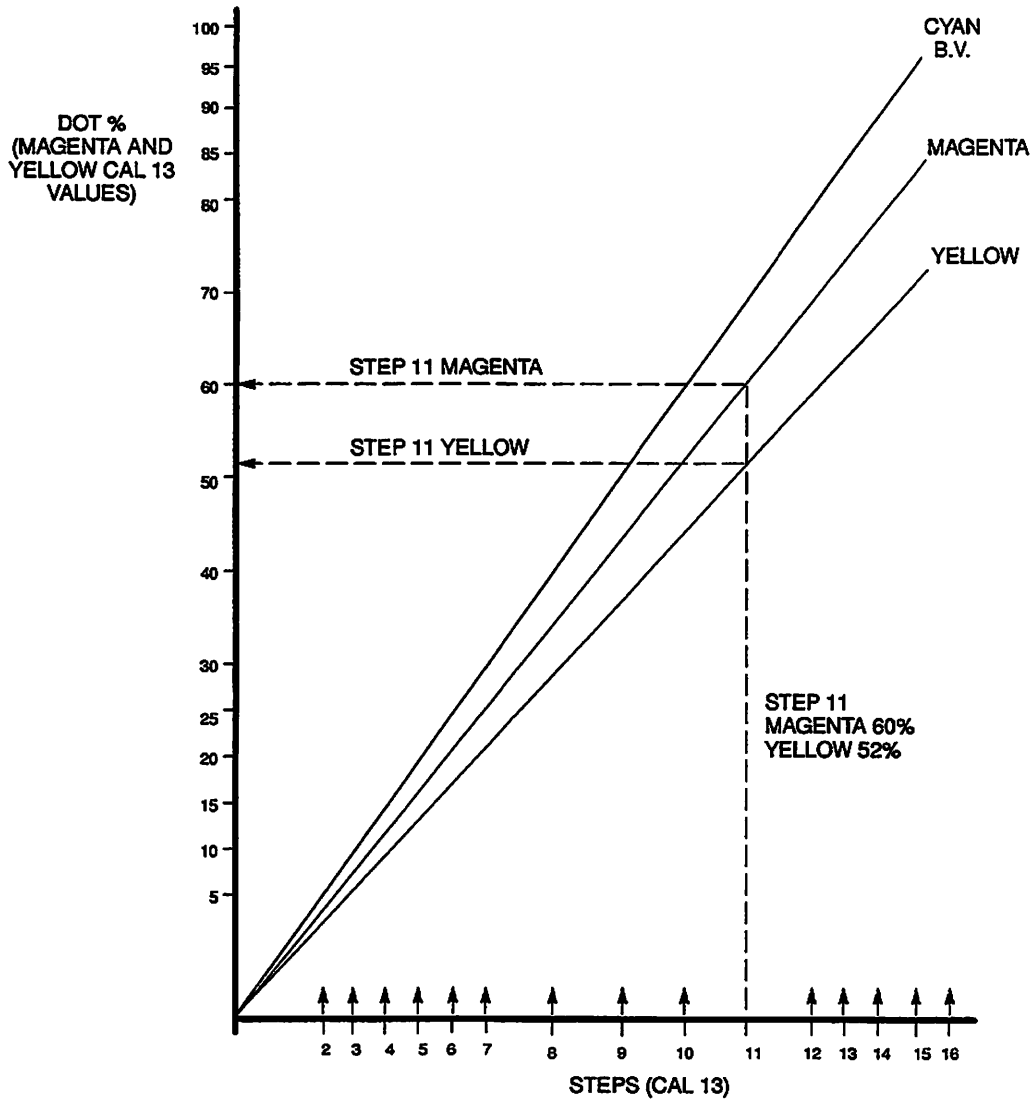


Figure 5.4 Finding CAL 13 dot % values for magenta and yellow

5.5.2 Grey Balance Window

The Grey Balance Window determines the extent of the Grey Balance function on colours with a high neutral content (browns etc.).

Valid entries are from 0 to 5. As the value is decreased, more colours are included within the grey balance envelope and will have the same grey balance applied to them.

For average subjects a value of 1.0 is recommended. If there are critical 'dirty' colours such as dark brown in an image (wood grain for example) a higher value can be entered to maintain the brown colour and avoid the browns being neutralized.

5.5.3 Print Density

The Print Density data provides a tone shape which takes account of the dot gain of the printing press being used. Any additional tone edits needed to match the customer's requirements are made using the Celsis® application edit controls. Average Print Density values have been calculated for the default values.

This section describes the procedure required to obtain your own print density data and enter it in the Grey Balance and PD window. The data will only be valid for any one set of printing/proofing conditions. Any change to the conditions will have an effect on print density and re-calibration will be necessary using the same procedure.

This procedure is normally performed along with the grey balance set up described in Section 5.5.1 and uses the same proof. If only print density values are to be measured you will need to prepare a Test Chart proof as described in that section.

1. From the same ten patches which were identified as neutral in the grey balance procedure (Step 4.), measure the reflection density of each patch on the proof though the visual filter. Use a correctly calibrated reflection densitometer.

2. The measurements of the dot % values of the equivalent patches on the cyan separation, made in Section 5.5.1 are also

required. Use these measurements or re-measure if they are not still available.

3. Plot the measurements obtained from Steps 1 and 2 above on a graph.

   Draw a smooth curve though the points obtained as shown in Figure 5.5.

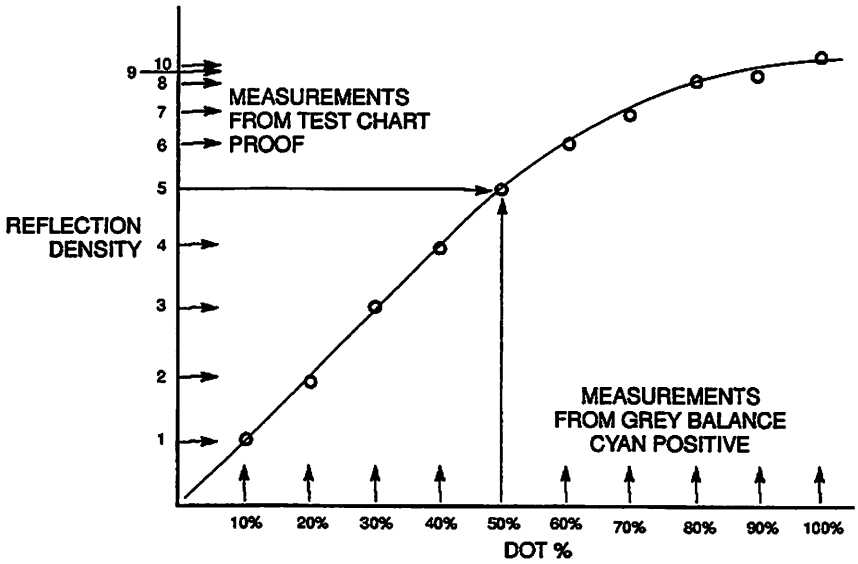


Figure 5.5 Print density graph - stage 1

4. Note the cyan dot % values from the **Grey Balance (Cal 13)** data in the Grey Balance & PD window.

   Many of these values will be similar in dot % to the values originally used to plot the curve but they will not be exactly the same. This is because the actual dot % values on the test chart vary a little from chart to chart. Additional values must be entered at 5, 15, 25, 85 and 95 % dot.

5. Plot these new values on the horizontal axis of the same graph as shown in Figure 5.6. Note that Greyscale Steps 1 and 16 are extrapolated automatically and need not be entered.

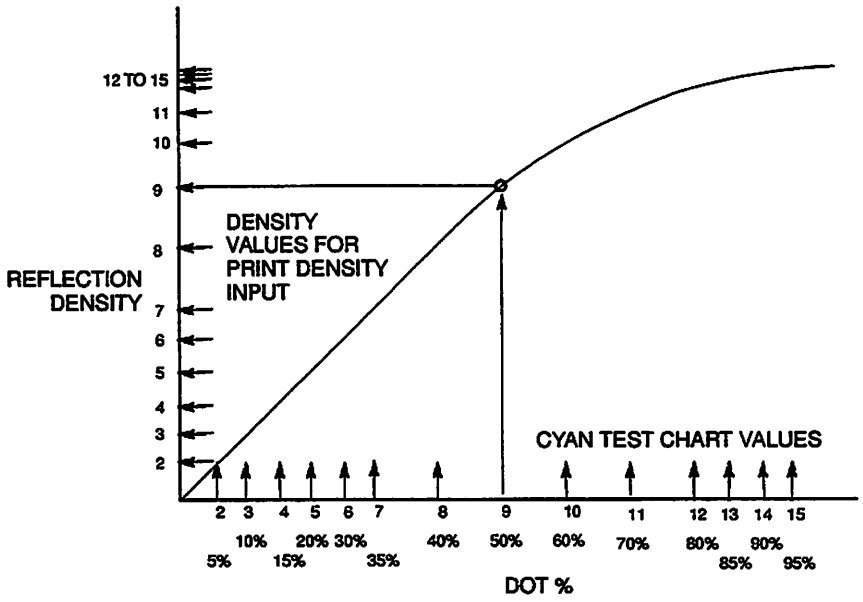


Figure 5.6 Print density graph - stage 2

6. Project a line vertically from each of these values until it reaches the smoothed curve, then horizontally until it reaches the vertical axis.

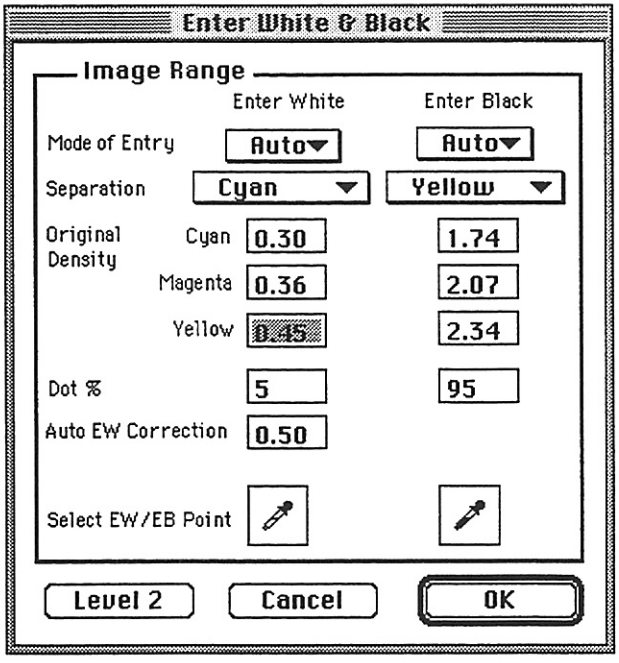
7. Read off the density values from the vertical axis and enter them in the **Print Density (CAL 504)** data boxes in the Grey Balance & PD window.

5.6 Enter White and Black

The Enter White, Enter Black (EW/EB) procedure is used to calibrate the scanner for the highlight and shadow end-points of the original. Enter White (EW) and Enter Black (EB) functions must be set **before** the editorial non-facsimile controls are used.

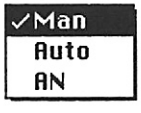
There are three methods used to specify the EW and EB values:

- The EW and EB points can be specified by positioning the analyse head at the appropriate area of the original and performing an EW or EB procedure. For more information refer to the appropriate scanner operator's manual, see Associated Documents.
- The EW and EB densities can be entered on the keyboard using CAL 28 and CAL 29 respectively or in the Enter White & Black window in the Celsis™ application. This method is useful when short range originals are to be scanned (having no highlight or no shadow region). It is also used when special effects are required or to speed the scanning process for a series of similar transparencies. For more information see Section 6.3.2.
- The Sampling method can be used to re-select an EW and EB point from the prescan image. For more information see Section 6.3.2.



Note: When accessed from the Setup Sheet the Enter White and Black window allows you to specify the basic Enter White and Enter Black set up parameters. As there is no image associated with this window the ***Original Density*** *data boxes,* ***Select EW/EB Point*** *eye droppers and the Level 2* ***Out of Range Staining*** *functions are greyed out. For more information on the use of these functions see Section 6.3.2.*

The Mode of Entry is drag-selected from the menu.



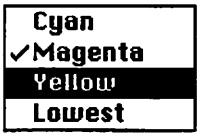
There are three modes which can also be selected. These allow the option of colour cast correction in highlights or shadows. Different options can be selected for EW and EB within the same image:

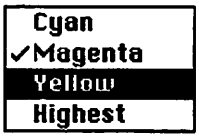
- The **Man** mode gives scanner facsimile reproduction. See Sections 5.6.1 and 5.6.4.

- The **Auto** mode operates in a similar way to Manual but provides partial neutralization of casts in highlights and shadows. See Sections 5.6.2 and 5.6.5.
- The **AN** (Automatic Neutral) mode also operates in a similar way to Manual but provides total neutralization of casts in highlights and shadows. See Sections 5.6.3 and 5.6.6.

Note that Grey Balance is applied to all output dot %. This is an automatic facility which compensates for deficiencies in inks, etc.. The effect that Grey Balance has on dot % is to reduce M and Y signals. This should be remembered when assessing the results of any EW or EB procedure.

The Black Printer is produced automatically by operation of EW or EB with a colour channel selected. However, further procedures are available to make adjustments to the Black Printer curve. These are described in Section 5.11.





In the Manual mode the separation whose dot % is to be as specified in the **Dot %** data box is drag-selected from the menu. You can choose a specific colour or the colour with the lowest original density if selecting the EW channel. You can choose a specific colour or the colour with the highest original density if selecting the EB channel.

This menu will be greyed out if the Auto or AN modes are selected.

The **Auto EW Correction** (CAL 27) function allows the level of correction of the Auto EW mode to be adjusted. The entry range is 0 to 1, where 0 gives no neutralization and 1 gives complete neutralization.

The function will be greyed out if neither of the **Separation** modes are set to **Auto**.

5.6.1 Manual Enter White

When the scanner is in the original density ([ORG]) mode, with the analyse head aimed at the first printing tone, the current value display will give the density values for Y, M and C as seen by the scanner.

The remaining two channels will be automatically adjusted to give scanner facsimile at that entry point.

It is not essential to select a dot % to enter for that point. The scanner will enter a default value in the channel selected if no entry is made.

5.6.2 Automatic Enter White

AUTO EW will always change the HL values of copy so that any cast is partially removed. It differs from Manual Enter White in that Y, M, C do not have to be selected.

AUTO EW always selects the lowest channel and deposits the current value in that channel. It adjusts the two remaining channels accordingly to give partial neutralization of any cast.

5.6.3 Automatic Neutral Enter White

Automatic Neutral Enter White (AN EW) will always neutralize any HL cast. If there are already visual neutral tones in the picture, use of AN EW to remove a cast will cause those neutrals to be rendered non-neutral and will partially neutralize pastel tones.

AN EW reduces the tone in the two highest channels so that all three channels are the same value, and then applies GB. The value chosen is either the default value or an operator value. The value will appear in the display's C channel after entry. If you suppress GB, all three channels will have the same value.

5.6.4 Manual Enter Black

When the scanner is in the original density (**ORG**) mode, with the analyse head aimed at the first printing tone, the current value display will give the density values for Y, M and C as seen by the scanner.

The remaining two channels will be automatically adjusted to give scanner facsimile at that entry point.

It is not essential to select a dot % to enter for that point. The scanner will enter a default value in the channel selected if no keypad entry is made.

5.6.5 Automatic Enter Black

AUTO EB should be used if the image has a shadow cast which you want to reduce. AUTO EB will set the default value or the keypad value in the highest channel regardless of which channel is selected, other than Black (B).

The other two colour channels are adjusted accordingly and all channels are grey balanced.

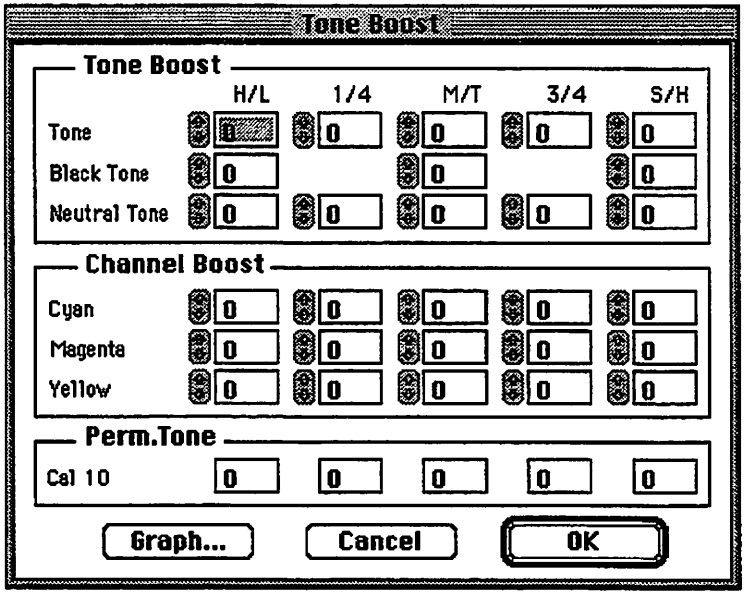
5.6.6 Automatic Neutral Enter Black

Automatic Neutral Enter Black (AN EB) will always neutralize any SH cast. All of the colour channels are brought to the same value and then grey balanced. This can be compared to an operator looking at copy and seeing a brownish, bluish, greenish shadow etc. which in graphic arts terms would be produced as black, with the C, Y, M balanced to provide that effect. AN EB neutralizes shadow areas, not coloured areas. It is neutral-selective.

Any area that is neutral before use of AN EB will be rendered non-neutral after AN EB. Also, when neutralizing for example, a dark green shadow, other very dark greens will be neutralized or partially reduced in greenness, but a medium-tone green area will not be affected.

5.7 Tone Boost

The Tone Boost window displays the Tone Boost, Channel Boost and Perm. Tone values.



- The Tone Boost Index values must be in the range of the Tone curve.
- Separate controls to boost the Black Tone are included. The function uses the same tone envelopes as normal tone. Controls do not include all regions as tone, i.e. H/L, M/T etc.. The Black Tone values must be in the range 0-40.
- The Neutral Tone Boost Index values must be in the range -50 to 50.
- The Perm Tone values must be in the range -40 to 40.

Note: Entries over ±20 are not advisable as adverse effects may be seen on the image.

You may find that occasionally you are unable to apply tone edits. There is a safety feature which prevents the operator unknowingly distorting the tone curve beyond its limitations.

If this happens, try re-entering EW and EB, perhaps using a different place on the image and/or a different mode of entry. If still unable to apply tone, try achieving the desired result with a different luminosity curve.

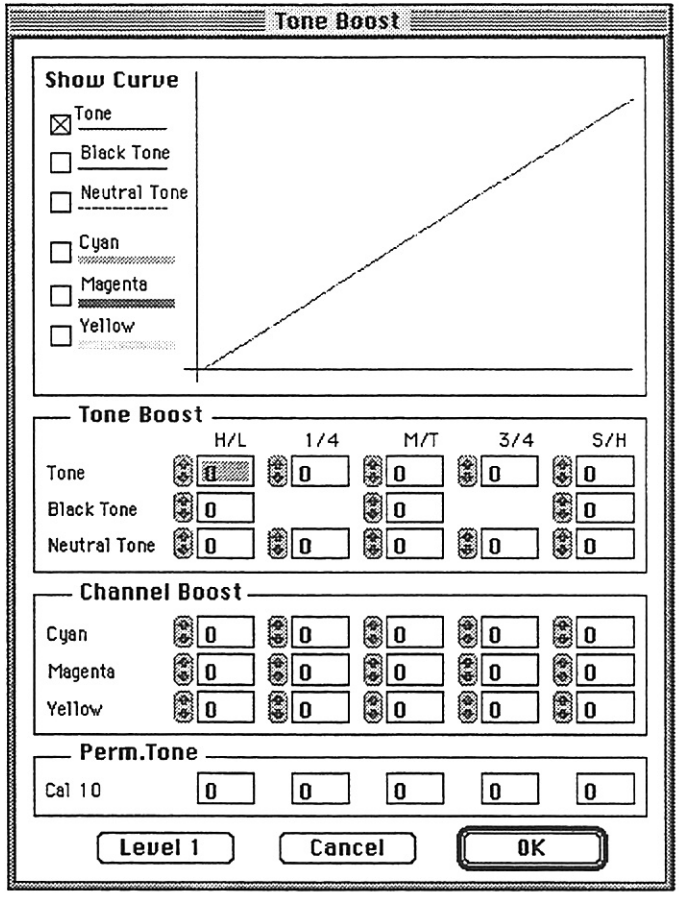
5.7.1 Perm. Tone

The Perm. Tone (CAL 10) values are set up when the system is installed to allow for local printing conditions.

5.7.2 Channel Boost

This function allows easy manipulation of the Tone data in each channel. Edits made to the curves should be extrapolated to ensure smooth gradation changes and minimize contouring. Unlike Cast, Channel Boost will not affect the neutral areas in an image.

This facility can be used in conjunction with Graphical displays by clicking on the **Graphs...** option button.

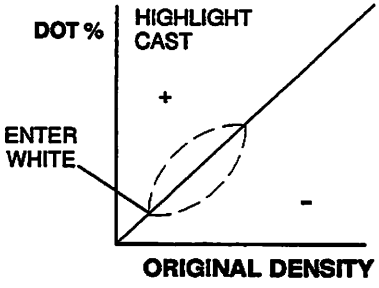


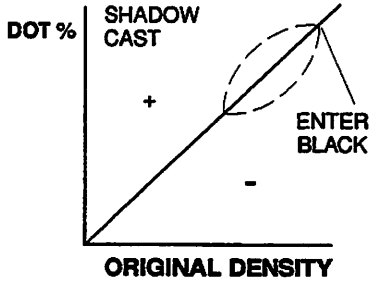
5.8 Cast

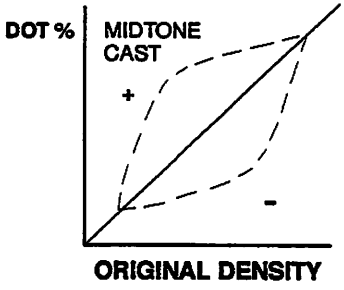
The Cast function is used to remove or introduce colour casts to an image. There are two Cast functions; Cast 1 and Cast 2.

- Cast 2 must be used before Cast 1. It removes or adds cyan, magenta or yellow individually to near neutrals in the shadow region only, without affecting colours. For example, if the shadow area is too brown, cyan can be added to make it near to neutral.
- Cast 1 removes or adds cyan, magenta or yellow casts independently in each colour channel, in the highlight, midtone or shadow areas. It affects all areas of the subject simultaneously whether they are coloured or neutral. Note that a linear shift is achieved with the use of highlight and shadow cast.

  The following graphs show the maximum Cast 1 edits which can be applied in each region.



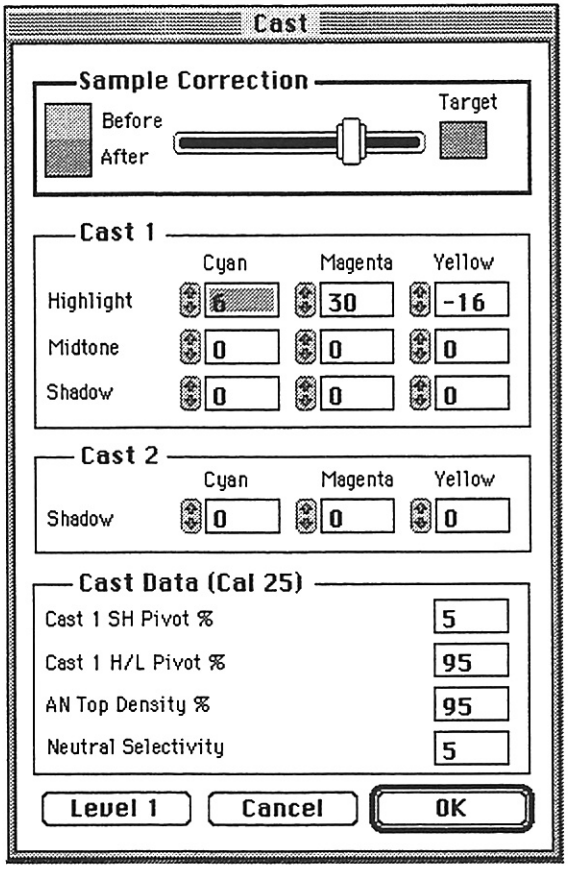




It is not necessary to use Cast unless:

- Use of Enter White and Enter Black adjustment does not give the desired result.
- You wish to introduce a cast.

Use the Cast edits immediately after Enter White and Enter Black adjustment to produce the reproduction characteristics desired. Then, proceed through the other edit functions you wish to use. Finally check for cast and make any further adjustments if necessary.



5.8.1 Cast 1 and 2

Cast 1 can be adjusted in the **Cast 1** data boxes or using the **Sample Correction** slider. The Sample Correction method can only reduce a cast. To use this method:

Note: When Cast is accessed from the Setup Sheet the Sample Correction is greyed out. This can only be used from the Job Sheet, see Section 6.3 Prescan and Image Editing.

1. Click in the **Before/After** sample box.
2. Move the pointer to the image and use it to select the point which requires cast correction.
3. Click to select. The sample box now shows the current cast of the point selected. The **Target** panel shows the effect of total cast removal from the point selected.
4. Adjust the slider to select the level of cast reduction you require. The **After** area of the sample box changes to indicate the level of cast removal selected. **Cast 1** values are updated automatically.

When entering cast corrections in the **Cast 1** or **Cast 2** data boxes, all Cast correction values must be in the range ±40. Values outside the range ±20 are not recommended.

5.8.2 Cast 1 Pivot Points

The **Cast 1 SH Pivot %** and **Cast 1 H/L Pivot %** functions allow you to specify the points where shadow and highlight Cast 1 pivot. The Shadow pivot point is normally set at the Enter White point (5%) and the Highlight point is normally set at the Enter Black pivot point (95%).

5.8.3 AN Top Density %

AN Top Density % specifies the dot % at which the three colour channels will converge to produce a neutral density when Auto

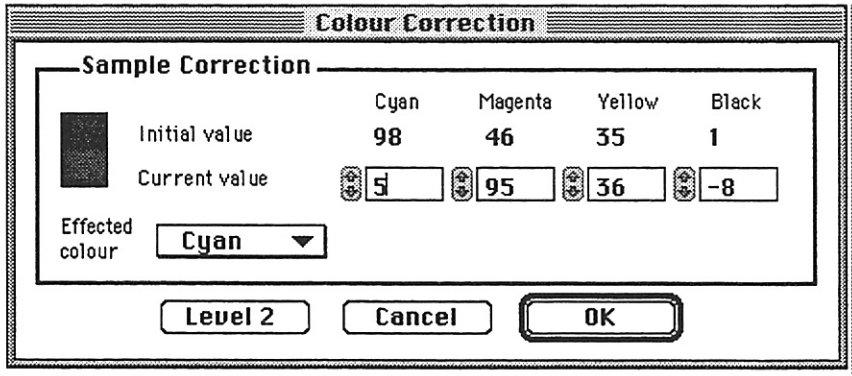
Neutral cast correction is applied to the shadows. Note that Grey Balance will be applied after this correction so you will only see neutral shadow values on the scanner Current Value Display if you first cancel any Grey Balance edit.

5.8.4 Neutral Selectivity

The extent to which Neutral Tone Boost and Cast 2 functions affect near-neutral colours can be controlled using the Cast Data (CAL 25) function in the Cast window on the Macintosh.

5.9 Colour Correction

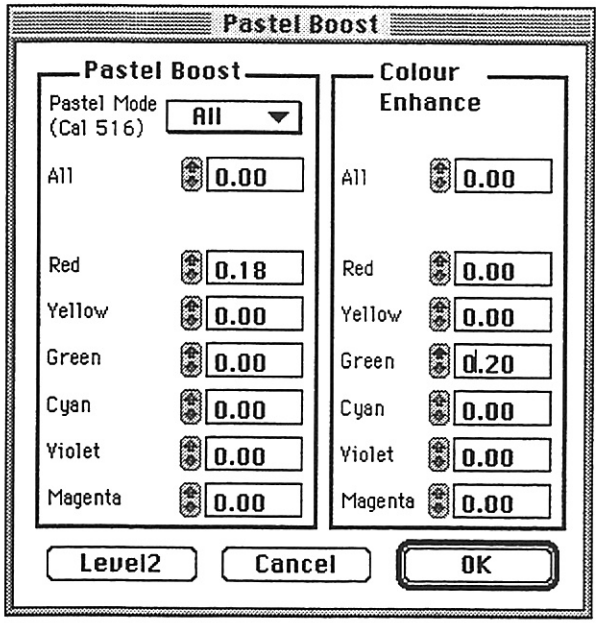
When Colour Correction is accessed from the Setup Sheet the Sample Correction is greyed out. This can only be used from the Job Sheet, see Section 6.3 *Prescan and Image Editing*.



5.10 Pastel Boost Window

5.10.1 Level 1

The Level 1 Pastel Boost window displays the Pastel Boost function, the Pastel Mode function and the Colour Enhance function.



Pastel Boost

This function increases the density of the highest colour channel or channels of all desaturated colours while leaving neutrals and highly saturated colours unaffected. It is calculated from the highest dot % after removal of the neutral component and thus approximately depends upon the difference between the highest and lowest of the three dot % values.

It affects both light and dark colours of low saturation but the effect is greater on pastel colours. The control affects colours where the difference between the highest and lowest is below 40% with the greatest effect at approximately 15%.

Before selecting the Pastel Colour Boost function the Pastel Boost Mode and Pastel Boost Curve functions can be specified if required.

A Pastel boost value can be assigned to each individual colour separately. Alternatively, all of the colours can be set to the same value by changing the value in the **All** field.

Pastel Boost values must be in the range -2.00 to 2.00.

Pastel Mode

The **Pastel Mode** is drag-selected from the menu.

The pastel categories are:

Category	Description
All	Any colour which falls within the bounds of the pastel curve will be affected by a boost. This option is also the default condition.
Clean	Only colours with a low grey component will be affected by a boost.
Dirty	Only colours with a high grey component will be affected by a boost.

Selection of **Clean** or **Dirty** pastels may require a higher boost factor to be applied than would otherwise be the case if **All** Pastels is selected.

Colour Enhance

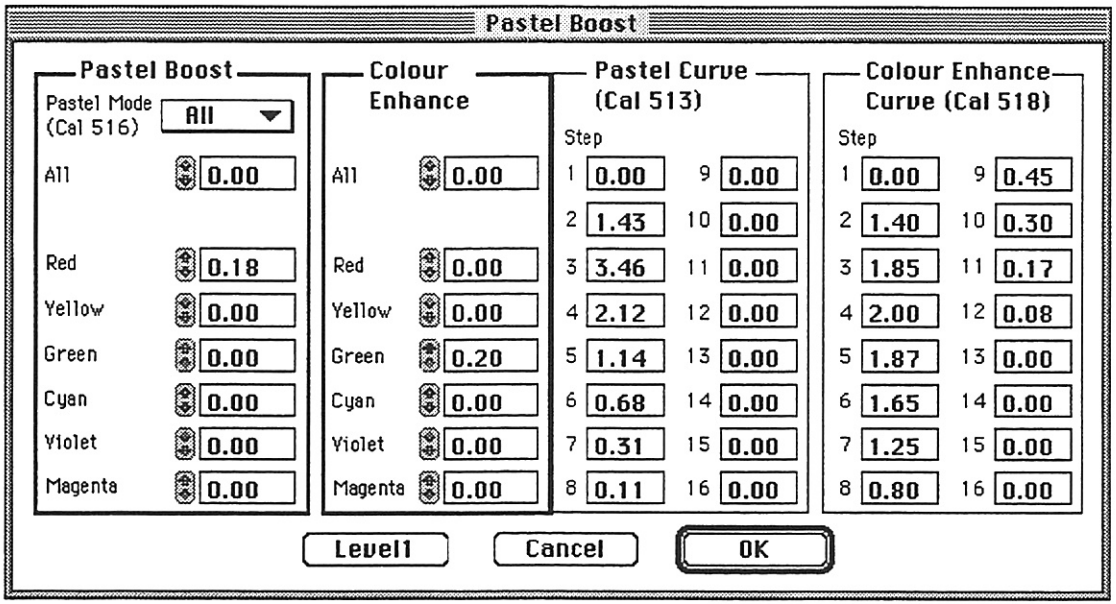
The **Colour Enhance** correction function cleans pastel colours by reducing the dot % in the lowest channel. It is particularly effective in cleaning colours such as browns and greens. The effect will be most noticeable in desaturated colours where the lowest channels have high densities.

Colour Enhance values must be in the range 0.00 to 9.99.

Before selecting the Colour Enhance function the Colour Enhance Curve function can be specified if required. See Section 5.10.2.

5.10.2 Level 2

Click on Level 2 on the Pastel Boost window to add the Pastel Curve and Colour Enhance Curve functions.



Pastel Curve

The Pastel Curve determines the effect of Pastel Boost at different saturation levels. It is equally applicable to any selected channel

and cannot be varied for individual colours. The recommended values are listed below.

Pastel Curve Step	Curve Values	Pastel Curve Step	Curve Values
1	0.0	9	0.0
2	1.43	10	0.0
3	3.46	11	0.0
4	2.12	12	0.0
5	1.14	13	0.0
6	0.68	14	0.0
7	0.31	15	0.0
8	0.11	16	0.0

Pastel Curve values must be in the range 0 to 4.00. Changes are not recommended unless you fully understand this function.

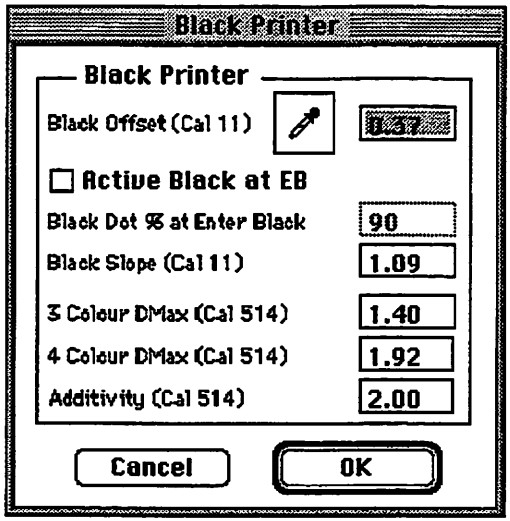
Colour Enhance Curve

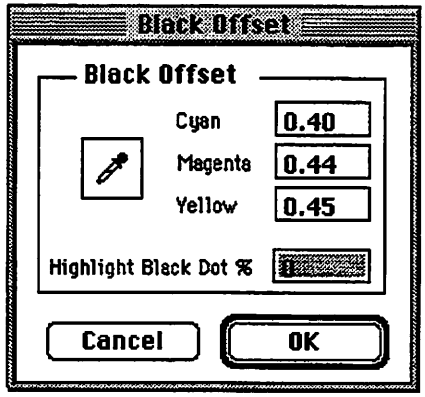
The Colour Enhance Curve determines the effect of enhanced colour correction at different saturation levels, It is set up during installation. It is equally applicable to any selected channel and cannot be varied for individual colours. Changes are not recommended unless you fully understand this function.

Colour Enhance Curve values must be in the range 0.00 to 9.99.

5.11 Black Printer

The Black Printer and Black Offset dialog boxes are used to set up black printers when PCR and UCR are not active. If the PCR or UCR functions are active they will override these black printer settings.





5.11.1 Setting up the Black Printer

The end points of the Black Printer tone range are automatically set relative to the Cyan when entering the CMY EW and EB points. The offsets from the Cyan and the curve shape between the end points can be adjusted using the Black Printer controls:

- The most common method of adjusting the Black Printer is to use MAN EB in the Black channel. This control will only alter the end points of the Black relative to the Cyan and will be effective for one job only.
- An alternative is to use the CAL 11 to set the end points of the Black Printer. The curve shape can then be changed between these end points using Black Tone edits. The Job file edits can be used for changes to single images or groups of images.

Further Black Printer controls are available using CAL 514 and CAL 13. These controls are used when setting up a scanner and should not be regarded as editorial functions.

5.11.2 Offset and Slope - CAL 11

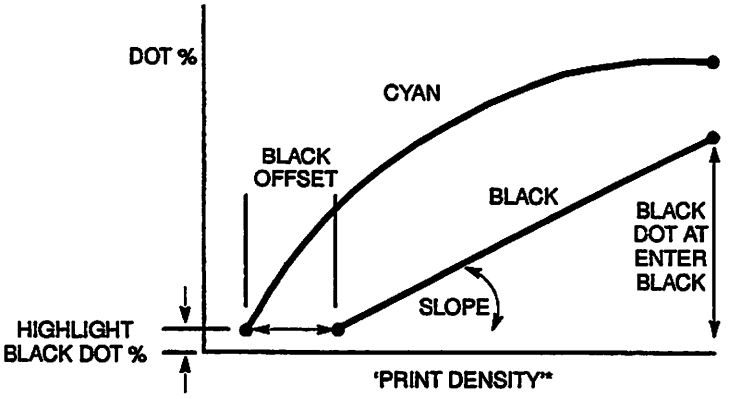


Figure 5.7 CAL 11 offset and slope

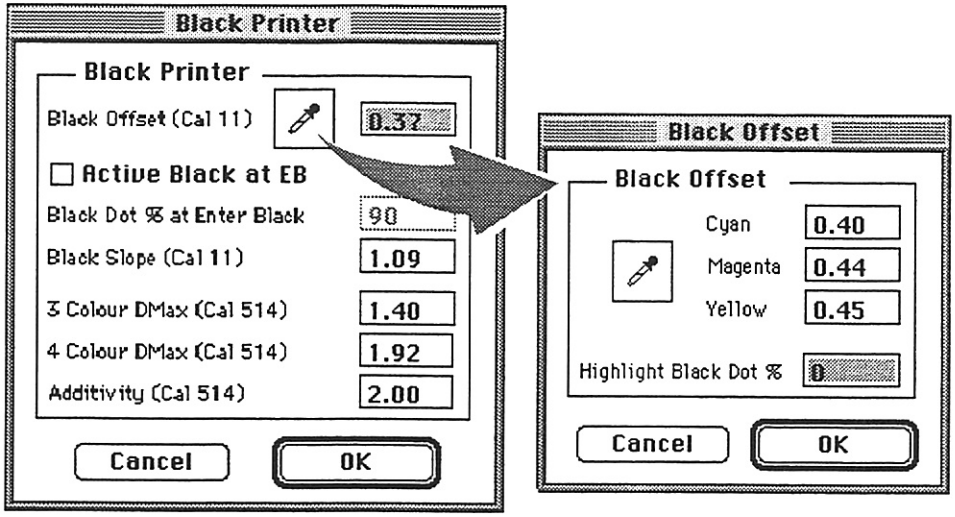
The parameters used to set up the offset and slope are as follows:

- The **Black Offset** determines the starting point of the Black compared to the Cyan. The value must be in the range -9.99 to 9.99.
- The **Highlight Black Dot %** is used to specify the dot % value at the black starting point.
- The **Black Slope** determines the rate at which the black increases. The value must be in the range -9.99 to 9.99. This function is only available if the **Active Black at EB** box is unchecked.
- **Black Dot % at Enter Black** provides an alternative method of specifying the slope. This method ensures that a specific black dot % is achieved. If a new **Black Offset** is used or the **Highlight Black Dot %** is changed, a new slope will be calculated automatically to maintain the same black dot % at

the black point. This function is only available if the **Active Black at EB** box is checked.

To specify the Black Offset, either enter a value in the data box or use the pipette to select a point in the image. If the pipette method is used proceed as follows:

1. Click on the pipette in the Black Printer dialog box. The Black Offset dialog box appears (it may be hidden under the image which is now active).



2. Move the pointer into the image, select a tone where you want the black printer to start then click. The original densities of the point selected are entered into the **Cyan**, **Magenta** and **Yellow** data boxes.
3. Edit the **Highlight Black Dot %** data box if required (not normally necessary).
4. Click **OK** to close the Black Offset dialog box and confirm the changes.

5.11.3 Black Curve - CAL 514

The Black Curve is produced from three values:

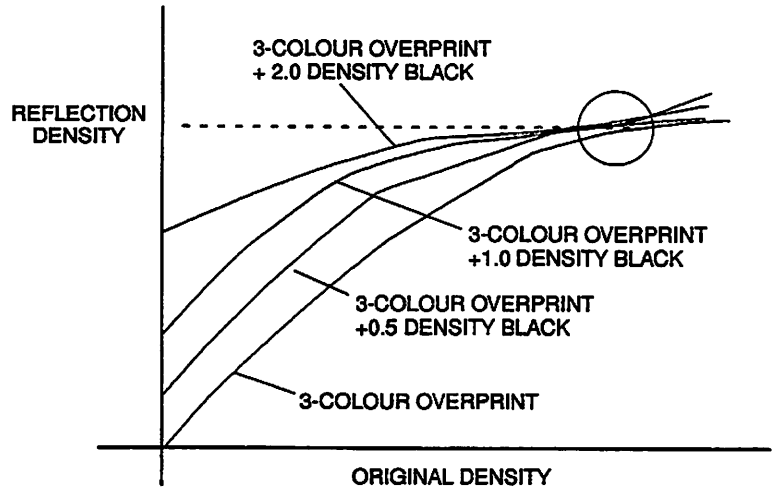
a) The grey-balanced tri-colour overprint density is obtained from the square on the 100% cyan block of the grey-balance test-chart which is assessed as being closest to neutral. This square will already have been identified if you have previously performed the grey-balance procedure. Measure the reflection density of this square through the visual filter.

b) The second measurement is made from the grey-balanced, three-colour overprint plus black. This value should be obtained by measuring a patch made up of the same C, M, Y dot % values used for the tri-colour but which also has a black overprint. There is no such area on the test chart but the non grey-balanced three-colour overprint plus black can be used as an alternative. Measure the step which has a cyan dot of 100%.

c) Additivity failure is defined as the inequality produced between adding the individual ink densities and measuring the combined ink density value. The value of additivity failure is the third figure required for the black curve.

   To obtain this figure it is necessary to construct a graph of data obtained from the test chart. The graph consists of a series of curves. Each curve plots the rise in density of a grey-balanced, three-colour overprint. The difference between the curves is the level of black overprint. The value you will need to find is the reflection density where all curves converge.

   In practice, these curves will not all pass through a single point. You will need to find the best estimate of the point of convergence and read off the corresponding reflection density.



To enter the three values:

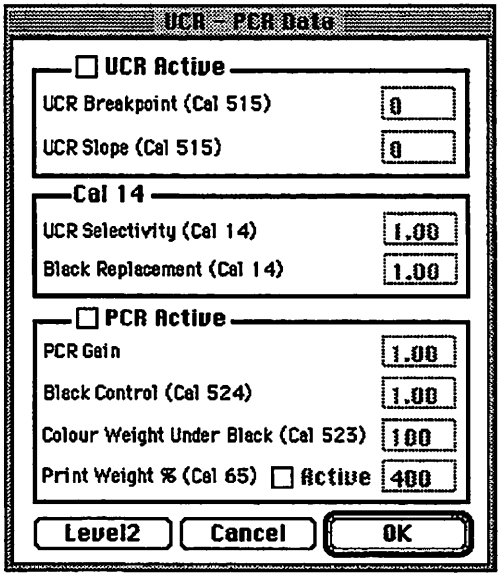
Perform Enter White using **[CAL] 28** and Enter Black using **[CAL] 29.**

Using the Black Printer window on the Macintosh:

- Enter Value a) in the **3 Colour DMax (Cal 514)** data box. The value must be in the range 0 to 3.00.
- Enter Value b) in the **4 Colour DMax (Cal 514)** data box. The value must be in the range 0 to 3.00.
- Enter Value c) in the **Additivity (Cal 514)** data box. The value must be in the range 0 to 30.00.

5.12 UCR - PCR Data

The Level 1 UCR - PCR Data window displays the basic UCR and PCR data.



UCR

Under Colour Removal (UCR) is defined as the reduction of three-colour ink in neutral and near neutral shadow areas. The black separation is increased to exactly compensate for the reduction in the other three colours.

When UCR is active the following UCR - PCR Data window, Level 1 functions are used:

- UCR Breakpoint.
- UCR Slope.
- UCR Selectivity.
- Black Replacement.

PCR

Polychromatic Colour Removal (PCR) is defined as the removal of the neutral component in any colour and its replacement by the black printer. It is also known as Grey Component Replacement (GCR).

When a colour is separated into its three component colours, the lowest channel and equivalent levels of the other two colours, only affect the grey component of the colour. Using PCR will effectively replace this grey component with black and re-proportion the colours to give the original colour. This means that when three colours are overprinted one of them will always be black.

For acceptable reproduction using PCR it is essential that grey balance is accurately set up for the appropriate printing conditions. A detailed procedure for the adjustment of grey balance and other printing parameters is described in Section 5.5.1.

When PCR is active the following UCR - PCR Data window, Level 1 functions are used:

- Black Replacement.
- PCR Gain.
- Black Control.
- Colour Weight Under Black.
- Print Weight %.

5.12.1 UCR Active

To activate (or deactivate) UCR, click the **UCR Active** checkbox, which toggles the function on and off.

5.12.2 UCR Breakpoint and Slope (Cal 515)

The Breakpoint is the dot % on the cyan channel where UCR commences.

The Slope determines how much UCR will be applied at and above the breakpoint. The Slope is specified by entering the maximum dot % which the cyan is to reach in the shadows.

Before entering a new breakpoint or slope, set up the job and perform all other edits. Position the Enter Black point under the analyse head.

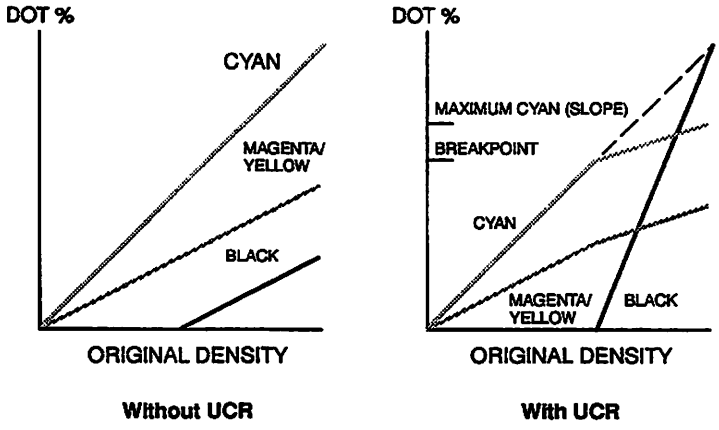


Figure 5.8 UCR breakpoint and slope

Enter values in the **UCR Breakpoint (Cal 515)** or **UCR Slope (Cal 515)** data boxes in the UCR - PCR Data window.

- The UCR Breakpoint value must be in the range 0 to 100.
- The UCR Slope value must be in the range -100 to +100.

5.12.3 CAL 14

CAL 14 functions are used to specify Selectivity and Black Compensation.

UCR Selectivity

UCR Selectivity determines whether UCR will be applied only to pure neutrals or will include dirty colours.

The entry range is from 0 to 1. At 0, UCR will only be applied in pure neutrals. The maximum use of UCR in dirty colours will be obtained with entry of 1.

Black Replacement

Black Replacement (also known as Black Compensation) determines the amount of black which will be added for a certain reduction in cyan. Black Replacement is also used with PCR.

Black Replacement value must be in the range 0.0 to 5.0.

At the Black Replacement Basic Value of 1.0 every 10% of cyan removed is replaced with 10% of black ink. At a value of 0, no extra black will be added to compensate for the colour removed.

The following procedure uses the grey-balance test-chart to calculate the black replacement value for PCR operation. It is therefore recommended that this procedure is performed immediately after setting up grey balance if PCR is to be used, see Section 5.5.1.

There is no equivalent procedure for UCR operation. If you are not satisfied with the default Black Replacement value an alternative must be determined by trial and error.

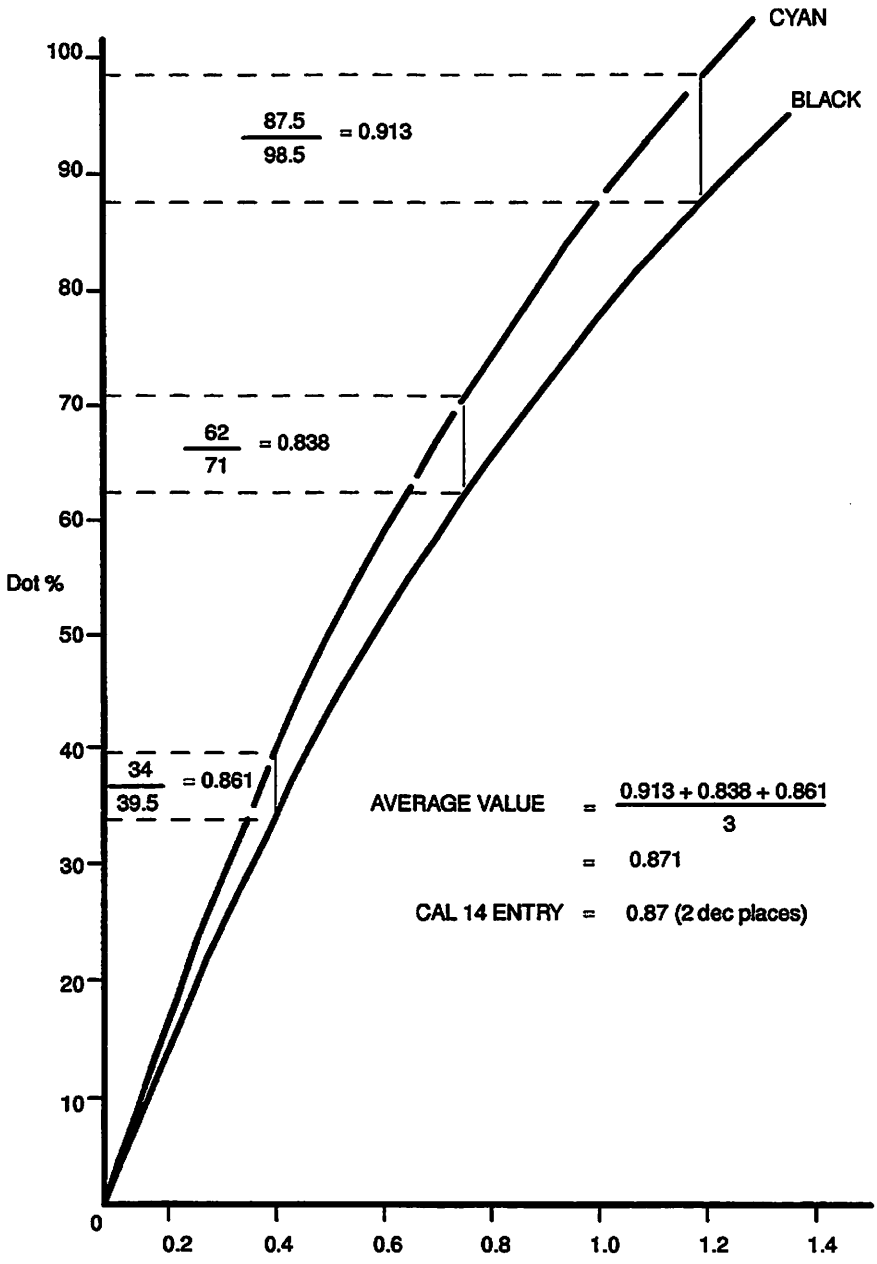


Figure 5.9 Black replacement graph

1. Select the Grey Balance & PD window from the Analyse Control or Job Sheet menus. Record the cyan dot % values in the **Grey Balance (Cal 13)** data box.
2. Measure the reflection densities of these steps from the proof of the test form, using a visual filter and an accurately calibrated densitometer.
3. Plot a graph of the reflection densities against the Cyan dot % values recorded in Step 1. See Figure 5.9.
4. Using the same proof, find the black greyscale and measure the steps. Again use a calibrated densitometer set up with the visual filter.
5. Plot another curve on the graph from the results obtained.
6. Choose three densities on the graph which are in the midtone to shadow area. Read off the corresponding Black and Cyan dot %values for each point.
7. Divide the Black dot % by the Cyan dot % for each density.
8. Find the average of the three values to an accuracy of three decimal places.
9. The new Black Replacement value is entered in the **Black Replacement (Cal 14)** data box in the UCR - PCR Data window.

5.12.4 PCR Active

To activate (or deactivate) PCR, click on the **PCR Active** checkbox, which toggles the function on and off.

PCR options must be selected at the completion of job setup as colour correction will calculate corrections based on the data displayed and not recognize that PCR is active.

PCR Gain

The Gain value must be in the range 0 to 1.00.

Black Control (Cal 524)

The Black Control function changes the weight of black. The value must be in the range 0 to 1.00.

Colour Weight Under Black (Cal 523)

The Colour Weight Under Black function allows three-colour inks to added to reinforce the black printer where additional density is required in shadow areas. The value must be in the range 0 to 100%.

Note: CAL 524 must be set before CAL 523.

Print Weight % (Cal 65)

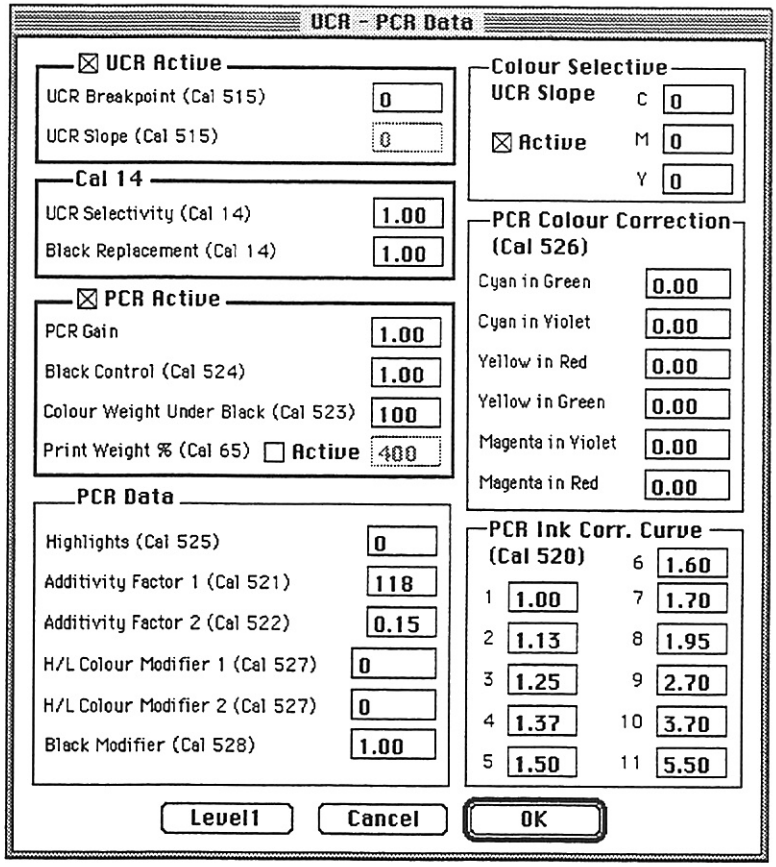
Print Weight is activated by clicking in the **Active** checkbox. This is used to automatically calculate the PCR Gain value, using the Enter Black point previously selected on the Enter White, Enter Black window.

- Select the **Active** checkbox.
- Put in the sum total of CMYK DOT % values.
- Click on **OK**.

If the system accepts the Dot % values then the PCR Gain Value is automatically calculated.

5.12.5 UCR - PCR Level 2

When Level 2 is selected, the UCR-PCR Data window displays the PCR Ink Correction Curve values, the PCR Colour Correction values and the PCR Editorial functions.



Colour Selective UCR Slope

Colour Selective UCR Slope is activated by selecting the **Active** checkbox. Colour Selective UCR Slope values must be in the range -100 to +100.

PCR Data

Highlights (Cal 525)

If a positive number, between 0 and 100%, is entered the PCR gain reduces from the maximum value (unity) at the breakpoint,

to zero at the dot % (positive value) selected by the operator. The breakpoint is set (by the system) to a dot % value half way between the operator value and 0% dot. A normal separation without PCR is produced at the shadow end. See Figure 5.10.

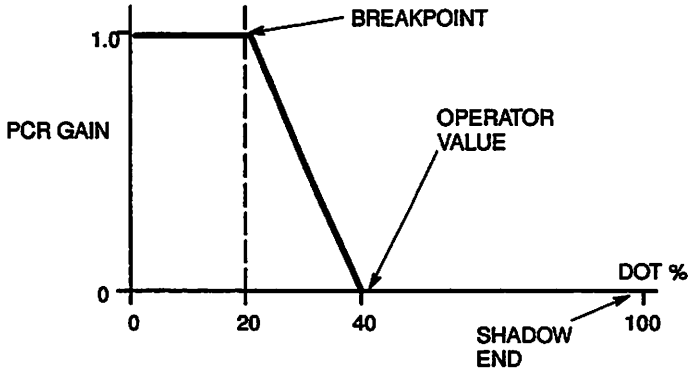


Figure 5.10 PCR restricted to highlights

If a negative number, between 0 and -100%, is entered the PCR gain increases from zero at the dot % (negative value) selected by the operator to the maximum value (unity) at the breakpoint. The breakpoint is set (by the system) to a dot % value half way between the operator value and 100% dot. A separation without PCR is produced at the highlight end. See Figure 5.11.

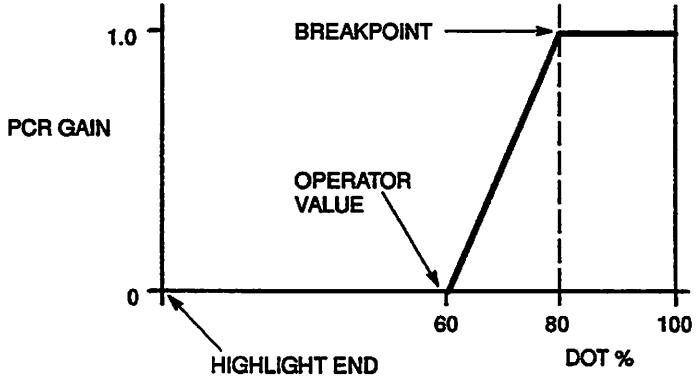


Figure 5.11 PCR restricted to shadows

Additivity Factor 1 (Cal 521)

Black additivity (Additivity Factor 1) compensates for additivity failure when PCR generated black is added to the black level computed before PCR was applied.

Use the following procedure to calculate the Additivity Factor 1:

1. This procedure is normally performed along with the grey balance set up described in Section 5.5.1 and uses the same proof. If only Additivity Factor 1 values are to be measured you will need to prepare a Test Chart proof as described in that section.
2. With an accurately calibrated densitometer measure the density of darkest the step on the black wedge.
3. Find a step on the three-colour and black overprint which matches the density measured in Step 2. The patch printed with a 60% cyan and 60% black is likely to be close.
4. Note the CAL 14 value used when the test chart was produced.
5. Calculate the Additivity Factor 1 from the following formula:

$$\frac{\text{(Black Dot \% in overprint)} \times \text{(Cal 14 value)} \times \text{(Cyan dot \% in overprint)}}{\text{(Black Dot \% in overprint)} + \text{(Cal 14 value)} \times \text{(Cyan dot \% in overprint)} + \text{(Black dot \% match of 60\% neutral step)}}$$

6. Enter the value calculated in the Additivity Factor 1, data box.

The Additivity Factor 1 must be in the range 0 to 150.

Additivity Factor 2 (Cal 522)

Colour-to-black additivity (Additivity Factor 2) specifies the level of neutral colour mix to especially dark regions to compensate for the inadequate density of 'normal' blacks.

The relationship between CAL 521 (BV = 0.15) and CAL 522 is expected to remain as:

$\frac{1\text{-}100}{x}$ where x is the value in CAL 521.

This relationship is not mandatory. Problems of gloss on less smooth substrates may benefit from an adjustment, which despite not being colorimetrically accurate, is more pleasing to the eye.

Enter a value in the **Additivity Factor 2 (Cal 522)** data box.

The Additivity Factor 2 must be in the range 0 to 6.00.

H/L Colour Modifiers 1 and 2 (Cal 527)

The PCR Highlight Colour Modifier function removes colour from a specified dot % area. A two-value, dot % entry system is used to select the region to be affected. Modifier 1 specifies a point up to which a black-and-white result will be produced, all colour being removed. Modifier 2 specifies a point where the PCR colour is returned to normal. Colour is introduced progressively between the two values.

The H/L Colour Modifiers must both be in the range -512 to +511.

Black Modifier (Cal 528)

The PCR Black Modifier function progressively increases or decreases the weight of the Black Printer to approximately 40% dot. It is advisable to check the shape of the black curve when using this function.

The Black Modifier value must be in the range -30 to +30.

PCR Ink Correction Curve (CAL 520)

The levels of saturation of the remaining colour components, after PCR has been applied, can be adjusted.

This procedure can be used to compensate for local printing conditions but should be used with caution as the effects may not be obvious if you are more familiar with conventional separations.

Each step represents a different dot %. The value displayed represents the corresponding gain applied to the colour components remaining after colour removal. The BVs are as follows:

Step	Dot %	Gain	Step	Dot %	Gain
1	0	1.00	7	60	1.70
2	10	1.13	8	70	1.95
3	20	1.25	9	80	2.70
4	30	1.37	10	90	3.70
5	40	1.50	11	100	5.50

It is advisable to obtain the new data by constructing a graph. The curve produced can then be modified and new data read off. This method will ensure that there is a smooth transition from step to step.

The PCR Ink Correction Curve values must be in the range 0 to 6.00.

PCR Colour Correction (Cal 526)

If PCR is set up correctly, perfectly acceptable results will be obtained without the use of PCR colour correction. Marginal improvements can be obtained by using the colour correction procedure but they will only be noticeable when direct and closely inspected comparisons are made.

Before using this procedure ensure that grey balance has been set up correctly. Gain applied to colours after removal of the grey components is a likely exaggerate colour errors.

With full PCR, only two components (of Y, M and C) are required for each colour pixel. Increases or decreases may be achieved in the following:

Step	Action
1	Increase/decrease Cyan compt of greens (C + Y)
2	Increase/decrease Cyan compt of blues and violets (C + M)
3	Increase/decrease Yellow compt of reds and oranges (Y + M)
4	Increase/decrease Yellow compt of greens (Y + C)
5	Increase/decrease Magenta compt of blues and violets (M + C)
6	Increase/decrease Magenta compt of reds and oranges (M + Y)

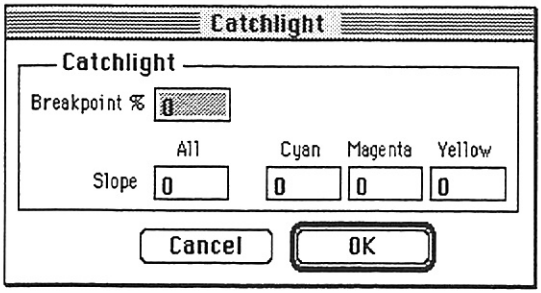
The greatest effect will be visible in the shadow tones.

The PCR Colour Correction values must be in the range -31.99 to 31.99.

5.13 Catchlight

The Catchlight control is used to create highlight drop-out effects in small areas. The Catchlight breakpoint determines the point at which the effect will commence. The rate of drop-out is determined by the Slope.

The Catchlight window displays the Catchlights (breakpoint and slope) values.



- The Breakpoint % values are in the range 0 to 100.
- The Slope values are in the range -4 to 4.

5.14 USM Data

Unsharp Masking is an electronically generated effect which increases the apparent sharpness of the subject. It works by accentuating contrast at an edge or around a point.

Figure 5.12 shows the dot % value recorded as the scanner passes over the boundary between a light and dark tone. In the right-hand example USM has been applied. Note how the edge has been enhanced by the introduction of light and dark fringes. Providing excessive USM is not applied the eye will not see the fringes but will see a sharper image.

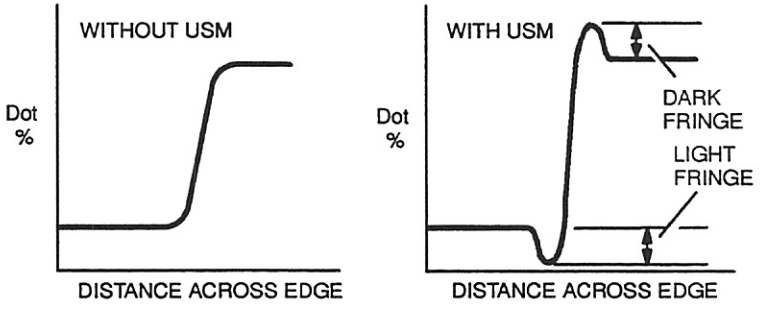


Figure 5.12 Dot % variations across an edge

The USM Data window displays the variables associated with Unsharp Masking.

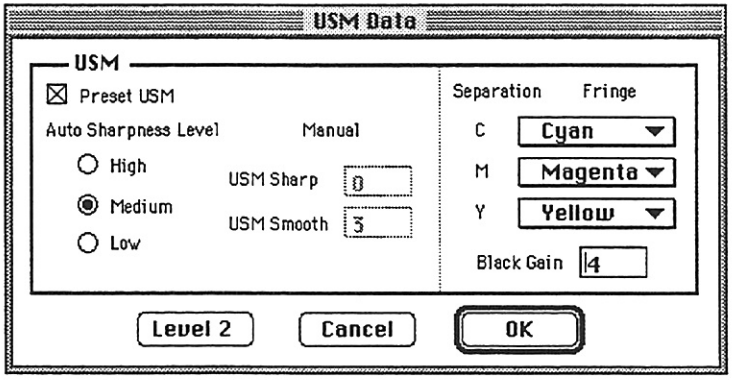


Table 5.1 Recommended USM settings

	Level 1			Level 2			
	Sharp	**Smooth**	**Black Gain**	**Threshold**	**Fringe Clip**	**D1**	**D2**
Adjustment Range	0-9	0-9	1-16	1-32	0-127	0/255	0-255
Suggested Range	4-7	2-5	4-10	2-10	20-40	150/200	150-255
Defaults	-	-	4	4	127 (off)	150	220
Average Settings	6	3	8	7	127	180	240
Coarse Grain	5	4	6	9	30	150	220
Fine Grain / Detail	7	2	8	4	127	200	255
Water Colours	4	3	6	9	127	150	220

	Level 2							
	Yellow Gain	**Magenta Gain**	**Cyan Gain**	**Neg Gain**	**White Attenuation**	**Preset Sharp Values High**	**Med**	**Low**
Adjustment Range	1-8	1-8	1-8	1-8	1-8			
Suggested Range	3-6	1-2	1	1-2	3-7			
Defaults	5	1	1	1	5	7	5	3
Average Settings	5	1	1	1	5			
Coarse Grain	5	2	1	1	5			
Fine Grain / Detail	3	1	1	1	5			
Water Colours	1	1	1	1	5			

5.14.1 Preset USM Mode

To select Preset mode, check the **Preset USM** box. The **Manual** options will then be greyed out.

The **Sharpness Level** can be set via the radio buttons. Select the level of USM required; High, Medium or Low. Each of these preset levels can be adjusted using the CAL 508 functions, see Section 5.14.5.

5.14.2 Manual Mode

In Manual mode the basic sharpness levels can be set along with Auto Aperture and/or Preset Focus.

USM Sharp

This is the principal USM setting. It determines the level of fringing to be applied. Its effect is, however, modified by other USM settings.

USM Sharp can be set within the range of 0 to 9 (9 gives maximum USM). Recommended values are listed in Table 5.1.

USM Smooth

If low level contrast is enhanced, photographic grain, skin blemishes etc., become exaggerated. It is generally necessary to suppress USM at these contrast levels. Smooth gain is used for this purpose by reducing the Sharp gain at contrast levels below a Threshold setting (set with the CAL 508 functions, see Section 5.14.5).

You can enter values in the range 0 to 9 units, in steps of 1 unit (9 gives maximum suppression). Recommended values are listed in Table 5.1.

5.14.3 Cross-coupling of USM Data

Cross-coupling of data allows the operator to take USM information from one channel and apply it to another.

This information can be advantageous for subjects such as flesh tones, where very soft texture is required but at the same time sharp hair is needed. The Magenta and Yellow may be cross-coupled to the Cyan signal the flesh tone will be made smooth because the Cyan will be the lowest signal in the Flesh colour, so blemishes or marks on the skin will not be enhanced.

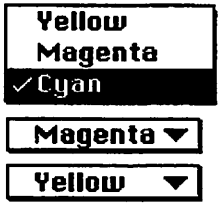
However, once the hair is sampled, the density changes will become more dramatic so the hair will appear sharp.

For subjects such as landscapes, the Cyan and Yellow may be cross-coupled to the Magenta signal. This will probably produce a very sharp result. The Magenta channel will have the most contrast and as USM is based on density changes then this will give maximum USM in all channels.

It should be noted that when cross-coupling is used the Colour Gain data of the channel to which other colours are coupled will be used. This means in our flesh tone example, for instance, if the Yellow channel originally had high Colour Gain (4 to 6), once it is cross-coupled to the Cyan this will no longer apply. The Colour Gain will then be that for the Cyan channel, so instead of a value from 4 to 6, a Colour Gain of 1 will apply.

Note: The default values for fringe channels will be Y=Y, M=M and C=C.

To select the channel from which the USM data for a separation will be obtained, select an option from the appropriate **Fringe** menu.

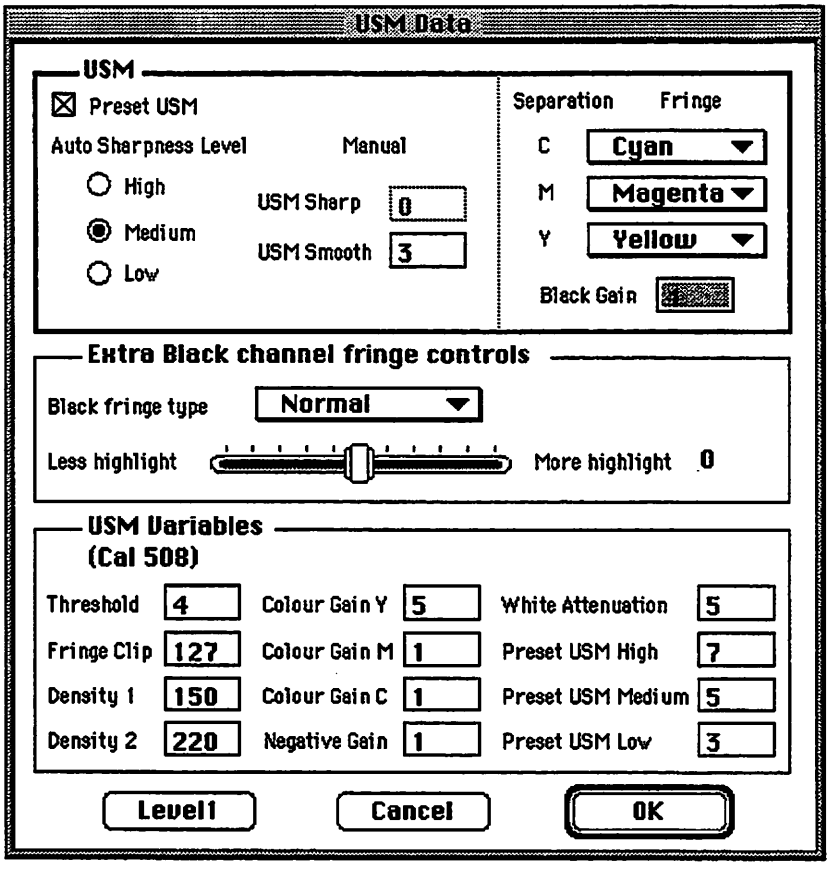


5.14.4 Black Gain

The Black Gain facility affects the black separation only. An increased factor results in an increase in fringe size and therefore produces a sharper black.

Values from 1 to 16 may be entered. Recommended values are listed in Table 5.1.

5.14.5 USM Level 2 Functions



To display the USM Variables, on the **USM Data window** click on the **Level 2** button. Recommended values for each of these functions are given in Table 5.1.

Extra Black Channel Fringe Controls

The **Less Highlight / More Highlight** slider provides additional control of the fringe on the black printer at low density levels. Choose a setting according to the type of subject:

- Move the slider to the left to obtain smooth highlight tones This can help to produce smooth flesh tones.

- Move to the right to obtain sharp edges. This can help to enhance specular highlights.

The **Black Fringe Type** menu allows you to select from two types of fringe:

- **Normal** produces a FUJIFILM standard fringe on the black printer. This fringe appears only where there is a change in density.
- **Colour Fringing** produces a fringe on the black printer where there is a change in density or colour.

Threshold

Threshold separates those density variations where USM Sharp has full effect, from those where USM Sharp is reduced, neutralized or reversed by USM Smooth.

You can enter values in the range 0 to 32 units, in steps of 1 unit. At 32 USM Sharp operates at maximum contrast levels. It is unlikely that you will need to enter values outside of the range 4 to 10. The default value is 4. At low Threshold values USM Smooth affects little picture detail. At higher Threshold values USM Smooth affects more picture detail and unsharp picture detail is likely. A very high Threshold value (above 10), together with a high smoothness value, will give a very unsharp separation.

If a set has 'black spots' then Threshold and/or Fringe Clip can be used to reduce these. Threshold can also be used for originals which are noisy in what should be smooth areas, or for subjects which are required to look smooth with few harsh edges, such as some watercolour or wash drawing originals.

Figure 5.13 demonstrates the effect of two example Thresholds for a range of USM Smooth values.

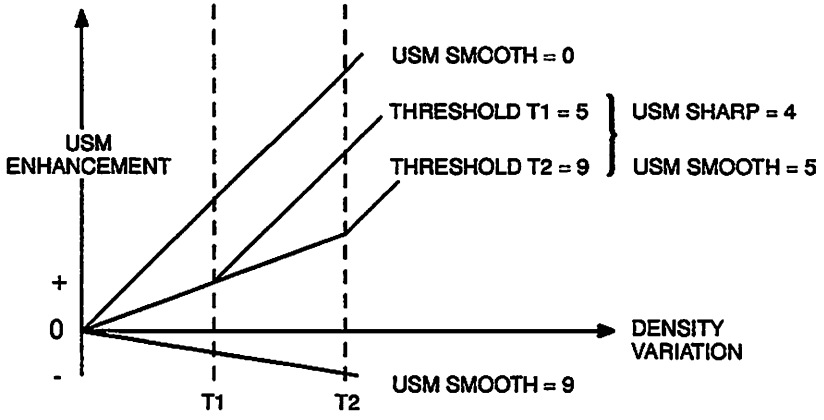


Figure 5.13 Effect of threshold

Fringe Clip

A high USM gain factor can give rise to heavy and unacceptable fringe characteristics. It is also possible that high frequency noise will occur, appearing as black spots in the fringe. To overcome these problems the Fringe Clip facility has been added. This facility has the effect of limiting the fringe level at high contrast areas whilst maintaining full USM gain in areas of lower contrast.

Fringe Clip is entered as a number within the range 0 to 127 which specifies Height D in Figure 5.14.

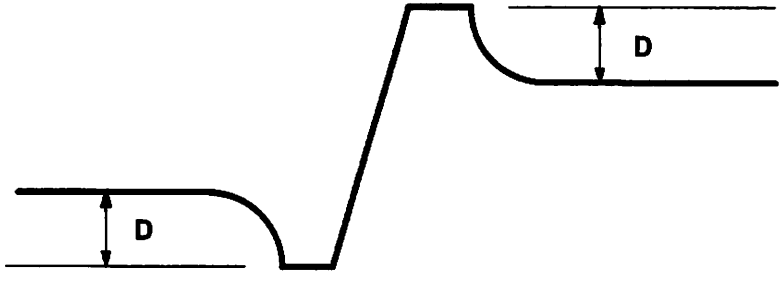


Figure 5.14 Fringe clip applied to light and dark fringes

Density 1 and Density 2

There is little detail in high density areas of an original but usually the dyes are grainy. It is beneficial to reduce USM Sharp in these areas.

At **Density 1** USM Sharp starts to reduce.

At **Density 2** USM Sharp becomes zero.

Assuming a linear tone shape, USM Sharp would reduce as shown in Figure 5.15.

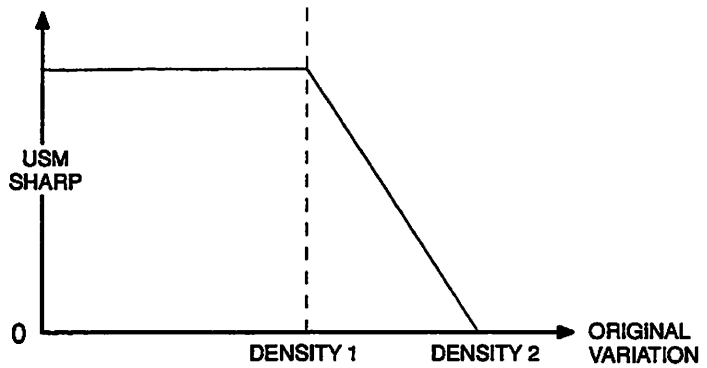


Figure 5.15 Roll-off

Density 1 and Density 2 must each be entered as a whole number value in the range 0 to 255 units. Default values are: Density 1 = 150, Density 2 = 220 units.

Colour Gain

The gain for each of the yellow, magenta and cyan channels can be reduced independently.

Enter values from 1 to 8. A value of 1 gives no reduction in gain, 2 gives approximately $^1/_2$ the gain, 3 gives approximately $^1/_3$ the gain etc.. For normal use a value of 5 is recommended for the yellow channel and 1 is recommended for the magenta and cyan channels. These are also the default values.

Negative Gain

The dark fringe can be increased independently of the light fringe, using Neg Gain.

Neg Gain is useful when negative separations are to be scanned and then contacted to positive at a later stage. When the contact copies are made, fill in of white fringe detail (on the positive) occurs. To compensate for this, the dark fringe on the negative can be increased using Neg Gain.

Considerable increase in apparent sharpness can also be achieved by using Neg Gain on positive separations.

Enter values in the range 1 to 8 units in steps of 1 unit. The BV (default value) is 1. Normal working values should be 1 or 2. The black fringe becomes more visible especially when Neg Gain is greater than 3. The setting chosen is very subjective and only the user will know the type of separation his customers demand.

White Attenuation

Under certain circumstances light fringes need to be suppressed. For example when type overlays a tint panel the fringe can be highly visible. White Attenuation can be used in these cases, to reduce light fringes independently of dark fringes.

Enter values in the range 1 to 8 units in steps of 1 unit. As the value entered is increased, the white fringe is reduced. At the maximum value there is no white fringe. The default value is 5.

It should be noted that if white fringes are totally removed, the overall effect can be an increase in density. This is because the density value is obtained from an overall reading which includes the average of the White and Black fringes, so if the White fringe is removed the average increases.

Preset Sharp

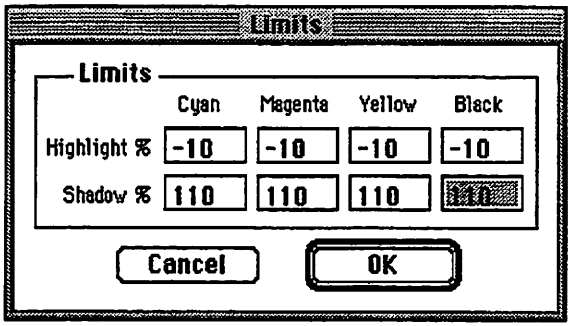
The final three functions are used to change the preset Sharp values which can be selected from the **Preset USM** buttons in the

Level 1 window. The values are entered for the high, medium and low preset values. Entries from 0 to 9 are allowed for each value. It is possible to enter any value in each display but to avoid confusion you are advised to enter a **High** value which is higher than the **Med** and a **Med** value which is higher than the **Low** value.

5.15 Limits

This facility allows you to define H/L values below which the Dot % will remain constant and therefore not drop out and in the SH a value above which the Dot % will remain constant.

The Limits window displays the limits values.

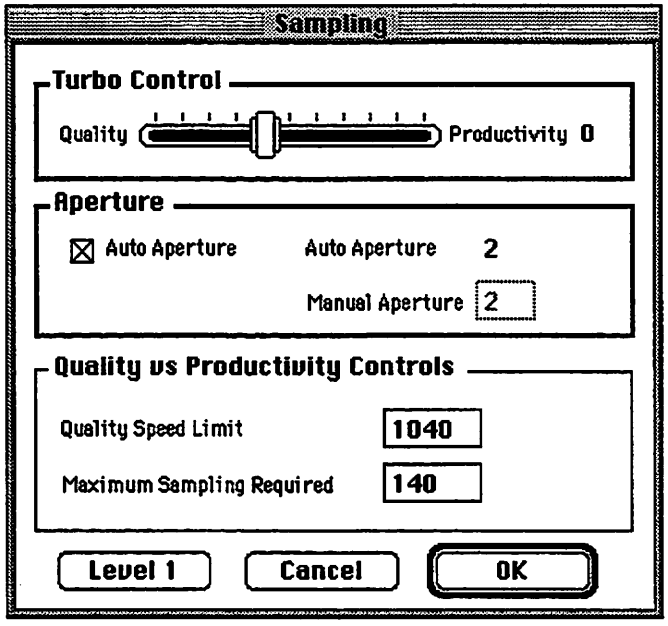


All percentage values are in the range -10 to 110%.

5.16 Sampling

Note: Scanners without a Crab board fitted (Celsis® 5250 (C.A.S.C.)) without the Celsis® Accelerator Upgrade) do not have ***Turbo Control*** *or* ***Quality vs Productivity Controls*** *functionality. These functions will be dimmed.*

The Sampling window allows you to set the parameters which control image processing.



The **Turbo Control** slider allows you to trade off image quality for an increase in productivity.

- At the right end of the slider range the scan is performed at a coarse resolution, giving high productivity. Image interpolation techniques are then used to create additional lines of image data.
- At the left end of the slider range the scan is performed at a fine resolution. The image quality is less likely to be dependent on interpolation.

The default level (**0**) produces a compromise between quality and productivity and is most suitable for average requirements. Alternative recommended settings tabulated below:

- To improve quality without increasing scanning time by more than 25% use the following values:

Quality/Productivity Settings	Enlargement					
Resolution	**50%**	**100%**	**200%**	**500%**	**1000%**	**2000%**
8 l/mm	-7	-5	-3	*	*	*
12 l/mm	-7	-3	-3	*	*	*
16 l/mm	-5	-3	-3	*	*	*

* Negative values are not recommended as quality gains will be minimal while scan times will be increased significantly.

- The settings listed above can also be used to reduce file size and increase file transfer rates. For example, if you reduce the resolution from 12 to 8 l/mm and use these settings instead of the default value (0) you will obtain similar quality. File sizes will be proportionally reduced and file transfer rates will be proportionally increased.

- To increase productivity by 10 to 30%, with little or no loss of quality use the following values:

Quality/Productivity Settings	Enlargement					
Resolution	**50%**	**100%**	**200%**	**500%**	**1000%**	**2000%**
8 l/mm	*	*	*	+3	+3	+3
12 l/mm	*	*	+3	+3	+7	+10
16 l/mm	*	*	+3	+10	+10	+10

* Positive values are not recommended as quality will be poor.

The **Aperture** panel allows you to select the Auto aperture or Manual aperture options:

- If the **Auto Aperture** checkbox is checked, the aperture which will be used when the current job is scanned is displayed in the **Auto Aperture** field.

- If the **Auto Aperture** checkbox is unchecked the Manual aperture option is selected. You can then select an aperture of your choice in the **Manual Aperture** data box.

If the Level 2 window is displayed you also have control of other quality/productivity parameters:

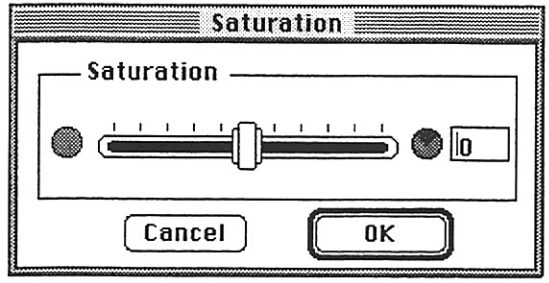
- The **Quality Speed Limit** function controls the enlargement level at which cylinder speed reductions start to occur. This function can be used to improve productivity at enlargements around 1000% or higher. The default value is 1040 rpm.

  Higher values increase productivity while lower values improve quality.

- The **Maximum Sampling Required** function controls the limit which is applied to the sampling rate. If it set too high it will result in grainy images. If it is set too low it will result in a loss of detail. The default value is 140 l/mm.

5.17 Saturation

This window allows you to change the maximum saturation of the image.



To change the saturation limit enter a correction factor between -50 and +50 in the **Saturation Limit** data box, or use the slider.

- With the slider moved to the extreme left (-50) a fully desaturated (grey) image is obtained.
- With the slider moved to the right (positive values) the lowest colour will be progressively reduced and the other two colours will be progressively increased, so as to enhance the colours in the image.

TOC

Using the Celsis™ Application 6

This chapter provides a functional description of the facilities available in the Celsis™ application. For a description of suggested methods of working with the Celsis™ 5250/6250 (C.A.S.C.) system see Chapter 7, Workflows.

6.1 Introduction

In this chapter the main functional areas of the Celsis™ application are described under the following headings:

- Analyse Control.
- Prescan and Image Editing.
- Queue Control.
- Special Options.

The Analyse Control window provides the basic control of scanning operations and can be accessed from the File Menu when not displayed automatically.

Note: The Analyse Control selection on the File menu will be greyed out if the Analyse Queue is running.

The Preferences windows provide you with the ability to tailor the Celsis™ application software operation to your individual requirements, see Chapter 4 *Setting Preferences.*

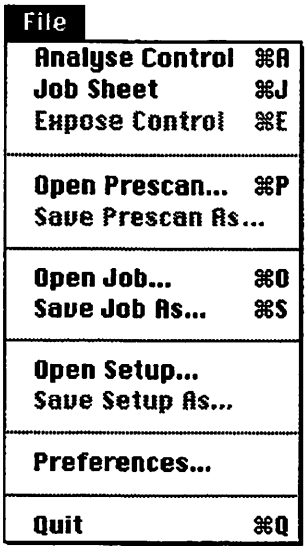
Note: **Scanner operation failed because the scanner is busy** *will be displayed on the Macintosh if the scanner display is left with a function selected when attempting the following operations:*

Starting the application,
Downloading to the scanner,
Accessing or updating the analyse control,
Starting the analyse queue.

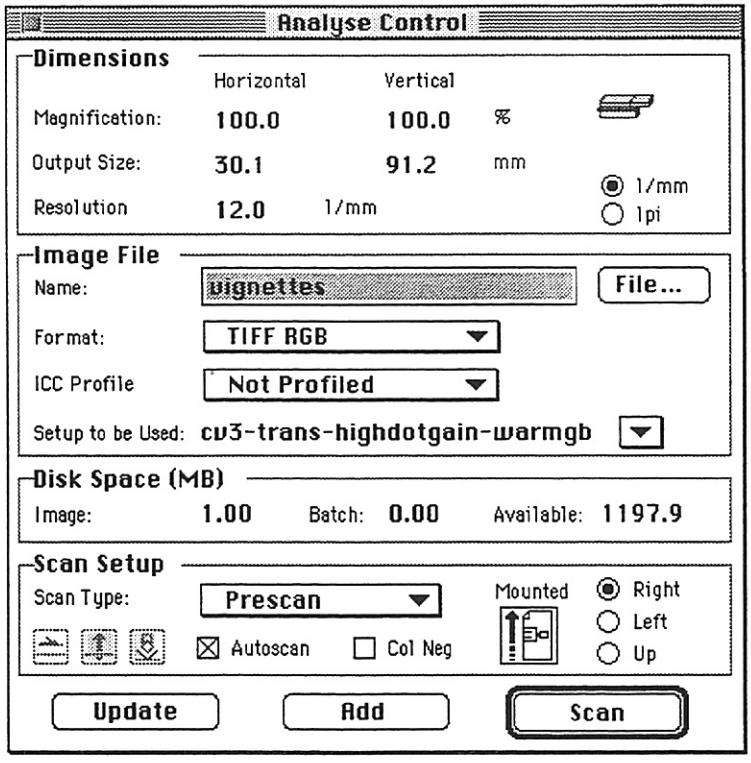
6.2 Analyse Control

The Analyse Control window allows you to load a new job to the Macintosh when the scan setup has been completed on the scanner. It is also used to initiate single scans.

To display the Analyse Control window, select **Analyse Control** from the **File** menu. The Analyse Control window may not be available if the system is busy performing another task.



The **Update** button is used to load current scanner information to the Analyse Control window.



The Analyse Control window:

- Displays the image parameters and dimensions, as defined by the scanner setup and/or Job Sheet.
- Allows the units that the image resolution is displayed in to be changed.
- Allows the scan format to be specified.
- Allows ICC profiling to be selected.
- Allows the Setup file to be specified.
- Allows output resolutions from 4 to 49.9 l/mm to be selected.
- Allows the allocation of a file name, file format and storage location for the HR images.
- Allows the orientation of the image, as mounted on the scanner drum, to be entered into the Celsis™ application.

- Displays whether lateral reversal is currently selected.

  The lateral reversal mode can be manually changed on the scanner by:

  - selecting the required mode with the Latrev button in the Job Sheet window, then downloading the job to the scanner,
  - pressing the Latrev button on the scanner.

LATREV NOT SELECTED

LATREV SELECTED

- Displays whether Transmission or Reflection is currently selected. The selection can be changed in the same way as lateral reversal. Note that optical changes may be necessary on the scanner when switching between modes. See Chapter 5 of the appropriate scanner operator's manual.

TRANSMISSION SELECTED

REFLECTION SELECTED

- Displays whether Autofocus or Manual Focus is selected. The selection can be changed in the same way as Lateral reversal.

AUTOFOCUS SELECTED

MANUAL FOCUS SELECTED

- Allows the Autoscan function to be selected. The use of Autoscan is recommended.
- Allows colour negative input to be specified.

  It is not necessary to select this option if the **Auto Negative Detection** checkbox is checked in the Preview Preferences window and Autoscan is also selected in the Analyse Control window or the Job Sheet.

If Auto Redisplay is not selected in the Prescan Preferences the preview image appears in original density form when first displayed. It is converted to a positive display by selecting **Redisplay** from the **Image** menu.

- Allows the selection of the type of scan: Prescan or HR to Disk.
- Allows the scan to be initiated.

Details on using the Analyse Control window are provided in the following sections.

6.2.1 Closing the Analyse Control Window

To close the Analyse Control window:

- Click in the **Close** button in the window header.

  The Analyse Control window will close. The settings of the window will be remembered however so that it will have the same contents the next time it is opened. Unless the scanner data has changed, then an update will display the new information.

6.2.2 Changing the Scanner Setup - Updating

When you change the scanner setup, the Celsis™ application must re-access the scanner to update the parameters displayed in the Analyse Control window.

After changing the scanner setup:

- In the **Analyse Control** window click on **Update**.

  A dialog box containing a 'scanner busy' message may be displayed - in which case see Section 6.2.11, *Scanner Busy.*

  The Analyse Control window changes to reflect the new scanner setup.

6.2.3 Saving an Image File

The name currently given to the image is displayed in the **name** data box.

If **Auto Name Increment** is set on the Preferences - General window, see Section 4.2 *General*, then the serial number for each scan will automatically be incremented. Otherwise the name displayed must be changed before starting a scan to prevent the previously scanned image being overwritten.

The folder to which the image is scanned can be selected by clicking the **File** button.

6.2.4 Changing the Setup File to be Used

If a setup file is selected the name will be displayed on the setup to be used field. This setup will be loaded over the scanner data when the job is scanned, edited or added to the queue.

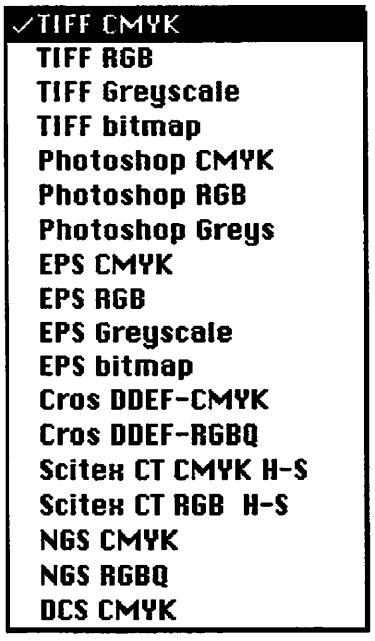
The associated pull-down menu allows you to select another setup file from the folder specified in the Preferences - General window, see Section 4.2 *General*.

If you want to use the scanner setup as it is, select **None**.

6.2.5 Changing the File Format

To change the image file format that the image will be stored in (not applicable to prescans):

- In the **Analyse Control** window select the **Formats** Menu.



- Drag to the required file format then release. Note that only those formats which are suitable for the current scan setup will be available for selection. In particular, if an ICC profile has been selected, only **TIFF RGB** will be available.

A brief summary of each of the file formats is provided in the next section.

When a greyscale file format is selected, the Celsis® application takes all the image data from the colour channel selected in the HR Preferences. The scanner can be set up so that the cyan channel is influenced by the other channels, and the amount that each colour contributes to the cyan channel can be varied.

Four or three channel greyscales can be generated by selecting CMYK or RGB formats and using saturation slider in the Saturation window to totally de-saturate the image.

6.2.6 Format Summaries

Providing full details of the file formats supported by the system is outside the scope of this manual, and can be found in a variety of other publications. However here are brief summaries of the formats. Heads up/left/right are available in all formats except bitmaps.

TIFF CMYK

Tagged Image File Format. Can be read by most desktop publishing packages. Can be used in page planning packages such as QuarkXPress, and also in colour retouch packages such as Photoshop®. TIFF files created by the system are in Macintosh format.

TIFF RGB

As for TIFF CMYK but should be used when the ultimate output will be RGB, or when the package can only read RGB. Do not use if the output will be CMYK as a loss of quality may result in the conversion.

TIFF Greyscale

As for TIFF CMYK above except for greyscale images. The colour TIFF formats can be used for black and white images - the only colour present being 'grey'. Greyscale files are more compact however as it requires less information to specify the level of black, rather than the levels of each component colour.

TIFF Bitmap

Standard TIFF line art black and white image. The only supported orientation is heads right.

When scanning reflection or transmission line art to Bitmap file format it is recommended that you:

- select Aperture 3
- select manual focus
- select manual Autobalance
- select **Line Mode** in the Catchlight dialog box and adjust the **Breakpoint %** if necessary to obtain the optimum line thickness
- for best quality results set the resolution to the maximum possible on the scanner; 49.9 l/mm

  If you require a higher resolution, scan the file using an enlargement of about 400% (depending on the size of the original) and reduce the image file later, using Photoshop®

  To obtain faster scans and smaller file sizes you can try using a lower resolution and adjusting the sampling rate for optimum results, using the **Turbo Control** slider in the Sampling dialog box.

Photoshop® 2.0 CMYK/RGB/Gray

Native formats of Photoshop® files.

EPS CMYK/RGB

Encapsulated PostScript® files. Same as a PostScript® file but with information on page position and size. Can be used with most page planning packages when the built-in low resolution preview version of the image is displayed on screen. Cannot generally be edited (for colour retouching for example). May be used for composite or separated (see 'DCS' below) output.

EPS Greyscale

As above but with greyscale image area.

For information on scanning linework see *TIFF Bitmap* earlier in this section.

EPS Bitmap

As above but line art black and white image. This format supports transparent whites. The only supported orientation is heads right.

For information on scanning linework see *TIFF Bitmap* earlier in this section.

Cros DDEF CMYK/RGB

The letters 'DDEF' in the list (Crosfield® DDEF-CMYK and Crosfield® DDEF-RGBQ) stand for Crosfield's Disk Data Exchange Format. This is a file format for data exchange between various Crosfield® systems (Studio 9000 series etc.). If you use Adobe Photoshop® software, as an optional extra FUJIFILM can supply 'plug in modules' (actually software products) which allow Photoshop® to read and export files in the two DDEF formats. Apart from enabling you to edit DDEF files using Photoshop® software, this facility allows you to convert files between a DDEF format and one of the other formats supported by Photoshop®, in both directions.

Note: Cros DDEF format can be used for transfer by removable media (e.g. floppy disk) and by a network.

Scitex CT CMYK/RGB (Handshake)

Scitex Continuous Tone. Contact Scitex for utilities which allow you to transfer images saved in these formats to Scitex systems.

Cros NGS

As for Cros DDEF above but for use when interchanging images via the network only, not via removable media.

DCS

Desktop Colour Separation format. An extension of EPS (see above) which allows images to be saved as colour separations. Can only be read by certain applications such as QuarkXPress. Images saved as five files; four of the files contain the high resolution colour information, the fifth contains a low resolution PICT preview of the image. Images saved in DCS format have transparent white areas.

6.2.7 Disk Space Information

This is an information panel only. It displays:

- the disk space in Mbytes required by the current image
- the disk space required by the jobs in the queue in the currently selected volume
- the available disk space in the currently selected volume.

6.2.8 Scan Setup

You have the option, by clicking on the **Autoscan** checkbox, to request the automatic Enter White and Enter Black setup as defined in the Enter White & Black window.

You have the option from the **Scan Type** pull-down menu to select either: **Prescan** or **HR to Disc.**

When selecting **Prescan** you can also select Autoscan, which means the prescan image will already have EW and EB set before you commence editing of the image.

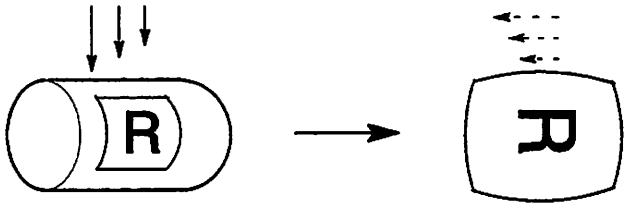
6.2.9 Changing the Orientation

Note: The lateral reversal function referred to in this section can only be switched on or off from the Job Sheet. The current selection is displayed in the Analyse Control window but cannot be changed.

Whenever possible it is best to mount the original on the cylinder so as to avoid the need for rotation of the image on the Celsis™ application, as this can be very time consuming particularly for larger images.

For DTP formats, mount images heads right to achieve heads up on the Macintosh without the need for rotation, as the lines on the Macintosh screen run from left to right and are written from top to bottom, whilst the scanner lines run from top to bottom and are read from left to right.

One way to picture this is to represent some successive scan lines as progressively shorter arrows. Whatever rotations and flips you have to do to get the scanner arrows to point in the same direction as the Macintosh arrows, these will also be applied to the image. An additional complication is caused by the fact that with the scanner Lat Rev option set to 'off', the lines are reversed as they are scanned in, so that the Macintosh screen lines effectively run from right to left. The following diagram illustrates the situation; the scanner drum is on the left and the Macintosh screen is on the right, Lat Rev is off.



A heads up image on the Macintosh screen can be achieved by changing the orientation of the image as mounted on the scanner drum. An image can be mounted so that it is heads right, heads left, or heads up, the corresponding orientation option ('right', 'left' or 'up') is then selected within the Celsis® application.

Each orientation option has a section below providing a full explanation. These sections show that there are four ways of achieving a heads up image on the Macintosh; for quick reference they are shown in the table below.

Image Orientation		
On Scanner Drum	**On Mac**	**Required Lat Rev Setting**
Heads right	Heads up	ON
Heads left	Heads up	OFF
Heads up	Heads up	ON
Heads up	Heads up	OFF

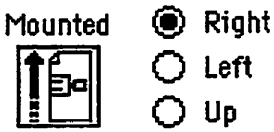
Not all the combinations of file format and orientation option can be selected; the following table shows the possible combinations (the fastest formats are marked 'F').

File Format	Right	Left	Up
TIFF CYMK	F	✓	✓
TIFF RGB	F	✓	✓
TIFF Grayscale	F	✓	✓
TIFF Bit Map	F		
Photoshop® 2.0 CMYK	F	✓	✓
Photoshop® 2.0 RGB	F	✓	✓
Photoshop® 2.0 Gray	F	✓	✓
DCS	F	✓	✓
EPS CMYK	F	✓	✓
EPS RGB	F	✓	✓
EPS Grayscale	F	✓	✓
EPS Bit Map	F		
NGS CMYK	✓	✓	F
NGS RGB	✓	✓	F
Scitex CT CMYK	F	✓	✓
Scitex CT RGB	F	✓	✓
Crosfield® DDEF-CMYK	✓	✓	F
Crosfield® DDEG-RGBQ	✓	✓	F

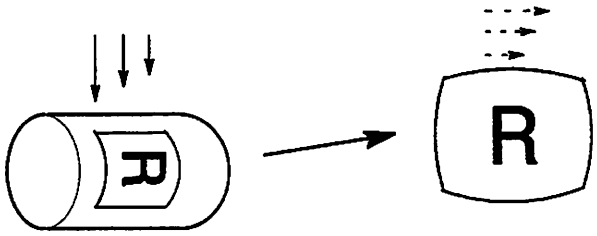
When a file format is selected, the orientation options which cannot be used with that format are 'greyed out'. If a non-allowed orientation is already selected, the orientation will automatically change to an allowed one. If 'up' is the non-allowed orientation, the orientation will change to 'right', as this achieves the fastest scan times. This setting can be changed to 'left' if desired. If 'right' or 'left' is the non-allowed option, the orientation changes to 'up' (as the table above predicts).

Right

To select the 'Right' orientation, on the **Analyse Control** window click on the **Right** radio button. With the Lat Rev option of the scanner set to 'off', the display shows:

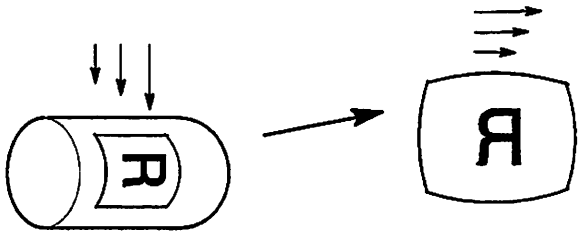


The image will appear right reading on the Macintosh screen. The following diagram illustrates the situation (see the introduction to the section for an explanation of the diagram).



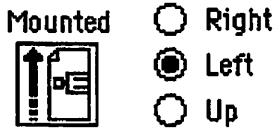
If the Lat Rev option is 'on' a transparency will be flipped, not rotated. Lat Rev 'on' is only needed when you need to flip a transparency on input.

If the Lat Rev option of the scanner is set to 'on' (see the Section 6.2.2, *Changing The Scanner Setup*) the image will appear the right way up on the Macintosh screen. The following diagram illustrates the situation.

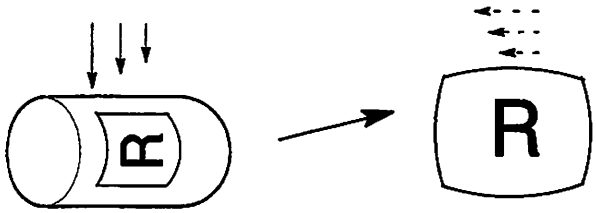


Left

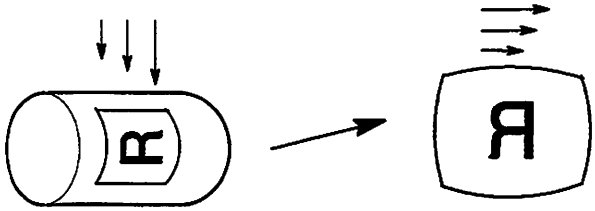
To select the 'Left' orientation, on the **Analyse Control** window click on the **Left** radio button With the Lat Rev of the scanner set to 'off' the display shows:



The image will appear the right way up on the Macintosh screen. The following diagram illustrates the situation (see the introduction to the section for an explanation of the diagram).



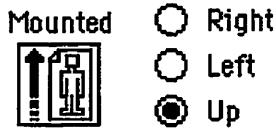
If the Lat Rev option of the scanner is set to 'on' (see Section 6.2.2, *Changing The Scanner Setup*) the image will appear wrong reading on the Macintosh screen.



Up

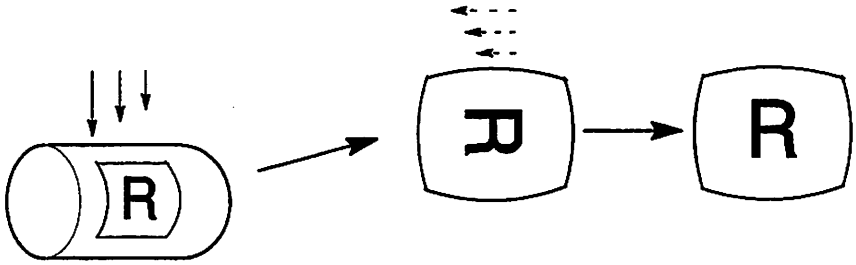
Note: To use the 'Up' orientation you must have more free disk space than would normally be required to store the image; the free disk space must be twice the image size.

To select the 'Up' orientation, on the **Analyse Control** window, click on the **Up** radio button. The display shows:

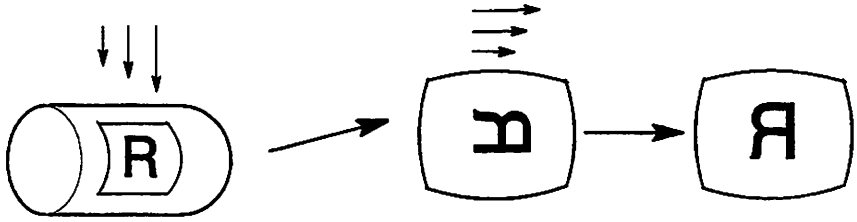


With the Lat Rev option of the scanner set to 'off', the image will be rotated and flipped to cancel out the normal orientation change, so making the image appear the right way up and non-laterally reversed on the Macintosh screen.

The following diagram illustrates the situation.



If the Lat Rev option of the scanner is set to 'on' (see Section 6.2.2, *Changing The Scanner Setup*) the image will still appear upright on the Macintosh screen.



6.2.10 Starting the Scan

WARNING

Before starting the scan ensure that no one is working on the scanner. Also check that the lid interlocks are operating correctly and have not been defeated. This is because when using the Celsis™ application, remote and unannounced operation of the scanner can occur.

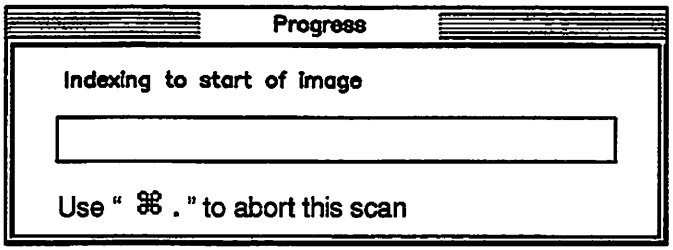
If you intend scanning the image immediately, once you are satisfied with the set up of the scanner and the Macintosh:

- In the **Analyse Control** window click on **Scan.**

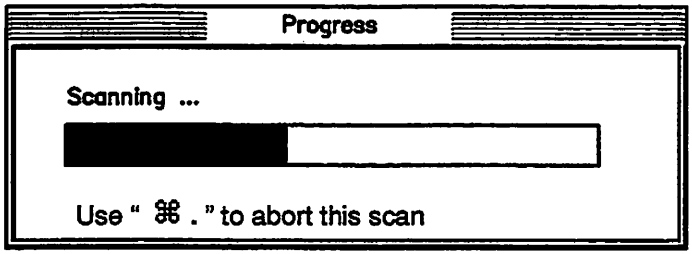
A dialog box containing a 'scanner busy' message may be displayed - in which case see Section 6.2.11, *Scanner Busy.*

Note: Before starting the scan the scanner updates automatically, so the scan is performed using the latest scanner setup (even if you have changed the setup and not clicked on ***Update****).*

The scanner display shows the message **Analyse to disc**. The Macintosh displays the following message for a few seconds while the scanner seeks to the beginning of the image:



Then the following message is displayed showing the progress of the scan:



If Autoscan is selected and the scan type is **HR to Disc** the scanner will complete two scans, the first being an original density capture for the Autoscan calculation and the second the actual scan. The Celsis® application will display a static status bar between the scans while the calculation takes place.

When storing the image on a device which is slower than a SCSI hard disk (such as an optical disk), a 'backlog' of data will build up on the 300 Mbyte buffer disk. The transfer of this data may still continue after the scanner drum has stopped.

Note: During this time the scanner keyboard should not be used, as doing so may cause the transfer to abort.

When the scan is complete the Analyse Control window is re-displayed.

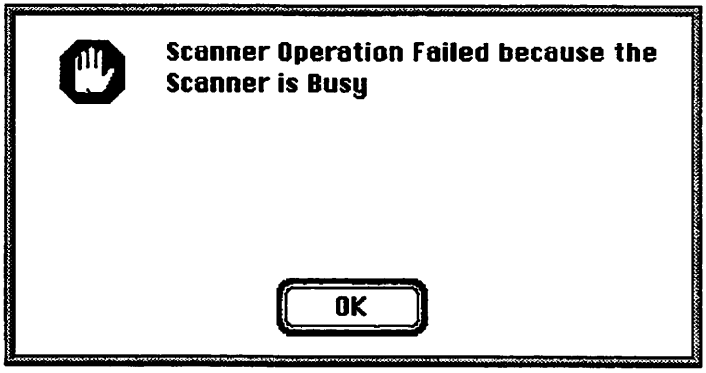
*Note: If the scanner should stop during a scan, press **[STOP]** on the scanner and restart the scan.*

The scanned images have icons indicating the file format, a typical example is:

Scan Image 1

6.2.11 Scanner Busy

On attempting certain operations the following dialog box may be displayed:



The box may be displayed when you:

- try to do an update in the analyse window,
- try to start an analyse scan.

The scanner will be busy for one of the following reasons:

- It has been left in a function e.g. Cast.
- It is still performing the previous scan.

- Another system is also connected to the scanner on the SCSI bus, and has reserved the bus to access the scanner. The scanner will relinquish control of the SCSI bus once the scanner operation is complete.

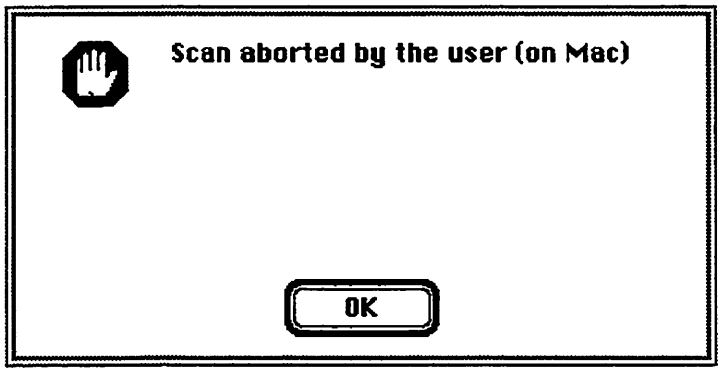
In each case you must wait for the scanner or bus to become available before retrying the operation.

6.2.12 Aborting the Scan

To abandon the scan:

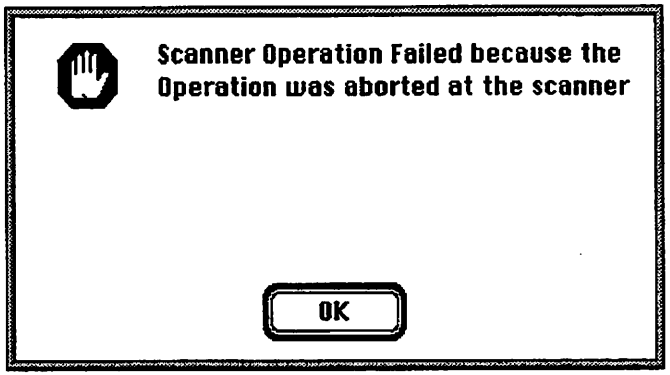
- Press the command key ⌘ and the period/full stop key (.) simultaneously, then release.

If the analyse scanner is still preparing the scan there may be a delay before the abort occurs. The following message is displayed.



Click on the **OK** button to continue. The display reverts to the Analyse Control window.

If the **[STOP]** button is pressed on the scanner keyboard to abort the scan the following message is displayed.



Click on the **OK** button to continue. The display reverts to the Analyse Control window.

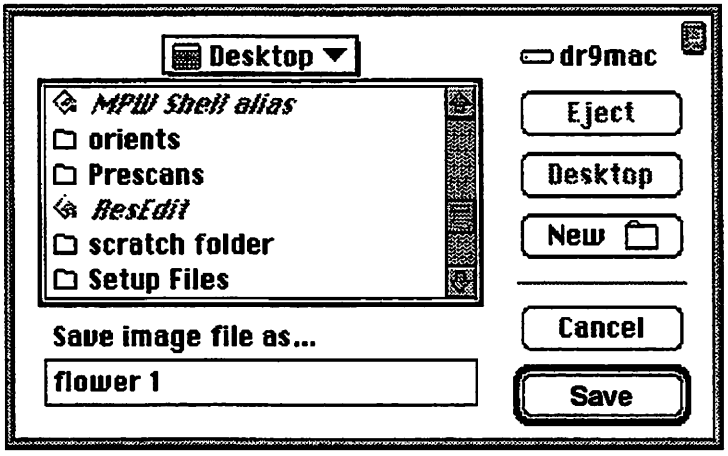
6.2.13 Selecting a Folder and Image Name - Saving as a Job

Until a file name has been defined, **Add** and **Scan** in the **Analyse Control** window appear in grey, rather than black.

To define a folder and file name:

- In the **Analyse Control** window click the **File** button.

  The Save As window is displayed:



- Select the required folder, click on **Open**, and type in the file name. Click on **Save**.

Note: As files in Crosfield's DDEF formats are intended for export out of the Macintosh environment, there are additional constraints on the file name. The name must have a maximum of eight characters (including any underscores '_'). Any characters typed in after the eighth character will be lost when the file is saved, and any illegal characters will be converted to underscores. A three letter suffix will be added to the file name to indicate the DDEF format, and the size of the file.

When a folder and file name are defined:

- In the **Analyse Control** window, **Add** and **Scan** change from grey to black and the name of the file is displayed in the scanned image window's title.
- In the selected folder an icon appears once the image is scanned with the defined image name, as shown below. The icon indicates which file format was selected.

scan 1

- If **Auto Job Storage** is selected in Preferences - General (see Section 4.2 *General*), a job icon is created once the image is scanned, as shown below. The icon appears in the jobs folder, which is set in Preferences - General, and has the same name as the image, with a '.job' extension. The icon represents the file storing the scanner setup and image parameters for the scan.

Scan Image 1.job

At this point you can scan in the image by clicking on **Scan** (see Section 6.2.10 *Starting the Scan*), or leave the actual scanning until a later scan from the queue (see Section 6.4 *Queue Control*). If you intend to scan the image from the queue, click on **Add** and ensure that the image name is added to the Analyse Queue, then start the set up for a new image.

If **Auto Job Storage** is not selected you can save the job manually using the **Save Job As** option from the **File** menu. See Section 3.2.1, *File Menu.*

6.3 Prescan and Image Editing

When you start up the Celsis™ application the Analyse Control window is displayed with the settings that were present when the application was last closed down.

Set up the scanner as required. Click **Update** to transfer the scanner settings to the Analyse Control window. To change these settings on the Macintosh before carrying out the prescan select **Job Sheet** from the **File** menu. Scan parameters may then be altered and either downloaded to the scanner to update the Analyse Control or the job added to the Analyse Queue.

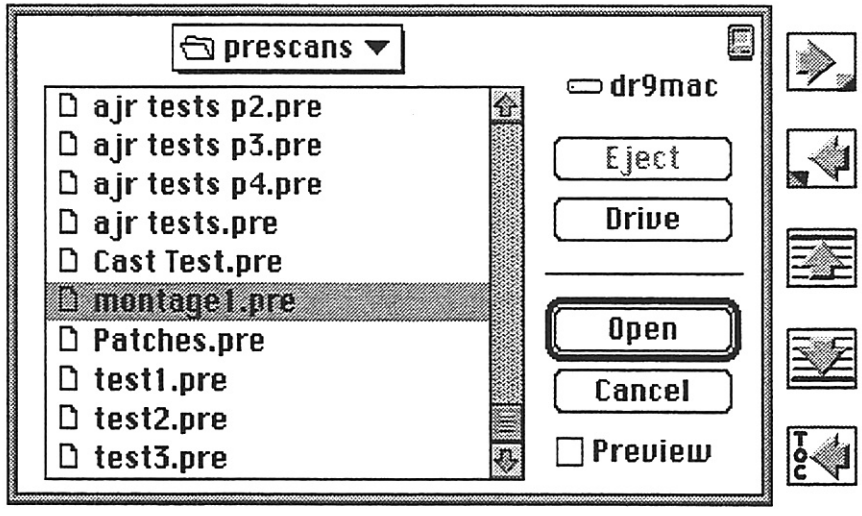
To start this prescan from the Analyse Control window just click on **Scan**.

*Note: When **Scan** is used the Macintosh software takes control of the scanner and alters the scanner settings to those set on the Macintosh. The Macintosh recalculates resolution, magnification, and lateral reversal to give a prescan of the appropriate orientation, and size as selected in preferences.*

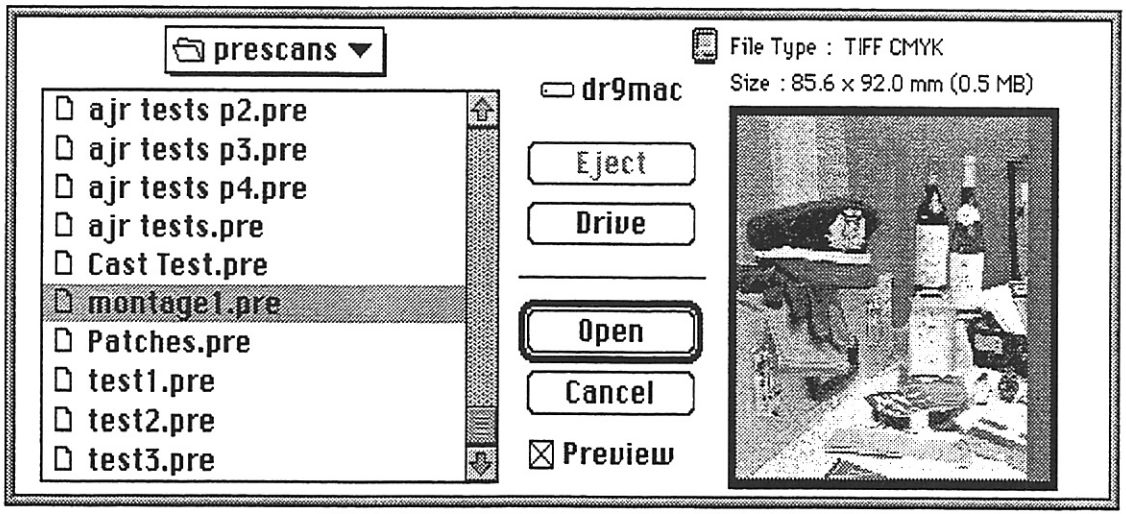
The Scan window is displayed as the image is scanned.

To select a stored Prescan image, select **Open Prescan** from the **File** menu.

The Open Prescan window is displayed.



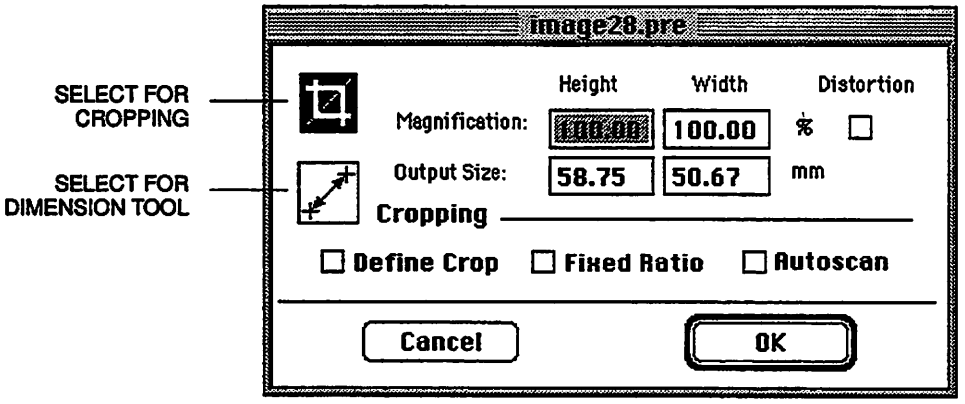
If the **Preview** checkbox is selected the preview window is added to the Open Prescan window to help you to select the required Prescan file.



Select a Prescan file and click on **Open**, the Prescan image is displayed in a window for you to crop and edit before HR scanning.

6.3.1 Crop-size Window

Click on the symbol in the bottom left hand corner of the Scan window to display the Job Sheet and the Crop-Size window.



The panel above opens ready for Normal Cropping and is located over the image. It may be moved to a permanent place of the operator's choice.

Introduction

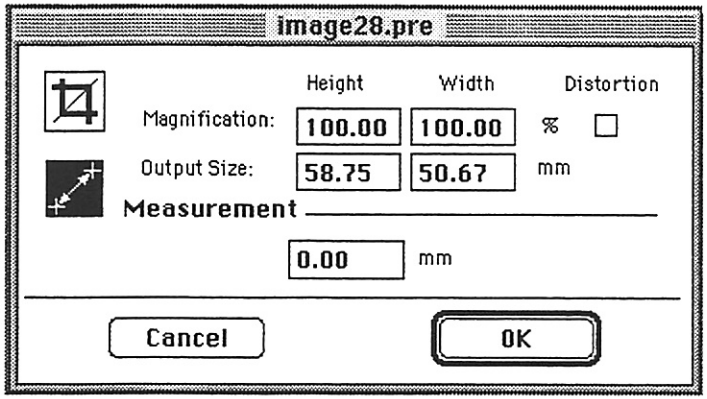
It is generally best to establish the correct magnification for the output size as the first step. See *Dimensioning a Cropped Image* after this introduction.

Once the magnification is correct, a crop box can be placed on the image by one of the methods given below. The box can then be moved, and the Dimensions enlarged or reduced either in a fixed ratio or independently whilst the selected magnification remains fixed.

If you want to set the magnification after specifying the crop dimensions, **do not click OK**, but proceed with the instructions in the following sub-section; *Dimensioning a Cropped Image*.

Dimensioning a Cropped Image

Click on the symbol on the Crop-Size window. The dimension tool function is selected.



The mouse pointer changes to a + symbol over the image. Click on a point then drag the pointer to the other point to define the measurement, a double ended arrow is displayed. Enter the required measurement in the box on the Crop-Size window. The magnification will be adjusted to produce the required dimension on the final image. Click on **OK** to save the magnification and crop only when **ALL** operations are complete to your satisfaction.

Cropping an Image

Define Crop Area:

This is perhaps the most useful and practical method of cropping. It is important to set the magnification first. (At least set a large enough magnification to achieve the output size otherwise an error message will be displayed.) Having selected the cropping function, select the **Define Crop** checkbox. The mouse pointer changes to a hand symbol when over the image. Enter the output size in the boxes then use the cursor to move the crop area rectangle to the required position.

Practical example: Original magnification is 1.00X
Original size is 50 mm x 50 mm

The crop required is for a double page A4 spread with bleed. Output size is 430 x 307.

Use the dimension tool as described to enter a final size between two points on the image. Once the magnification is set, click on the Crop Tool then on Define Crop Area.

For an image heads up on the Macintosh, enter 430 for the width and 307 for the height.

Place the 'hand' inside the crop, hold down the mouse button and move the crop as required on the image. When satisfied click on **OK**.

Note: The most accurate cropping is achieved on large prescans of small original areas.

Normal Cropping

Select the crop function. The mouse pointer changes to a ⊕ symbol over the image to allow you to position it to select a corner of the crop area. Hold down the mouse button and drag the ⊕ symbol to the opposite corner of the crop area. Once the crop area is selected you may enter a new magnification or new dimension. It is only necessary to make one entry as the remaining parameters are calculated accordingly. A practical method may be to enter the output size for one dimension and then adjust the other dimension by manipulating the crop box. To do this, place the pointer on one of the sides with a length which does not require adjustment, an arrow will appear. Holding down the mouse button, drag the box to the required dimensions.

Fixed Ratio Crop

Select the crop function. Click on **Define Crop Area** and enter the output dimensions (enter a larger magnification first if needed). Deselect **Define Crop Area** and click on **Fixed Ratio Cropping**. Place the pointer on a side or corner of the box, an arrow will appear then by holding down the mouse button and dragging the box, the sides can be changed in a fixed ratio.

Whilst **Fixed Ratio Cropping** is selected, the magnification will be greyed out. After setting the crop box, if you wish to enter a new magnification, deselect the **Fixed Ratio Cropping** box. A new magnification can then be entered in one of the magnification data boxes and the dimensions will change accordingly.

*Note: Both **Define Crop** and **Fixed Ratio** options cannot be selected at the same time. They may be used successively but the option currently in use must be deselected first.*

Magnification:

To change the magnification, enter a percentage figure e.g. 150 in one of the **Magnification** data boxes. The **Magnification** data box for the other dimension will update automatically.

Distortion:

Magnification may be applied independently to height and width. Click on the **Distortion** checkbox, then enter separate magnifications for each dimension.

To Start Afresh:

If you change your mind and wish to remove the crop box and restore original values (before clicking on **OK**) the quickest method is to click on **Cancel** and then re-open the Crop-Size window.

Note: The crop-size window is also available from the Job-Sheet pull-down menu.

Autoscan After Cropping

With this option selected an Autoscan will be performed automatically when **OK** is clicked. The results of the Autoscan

will be automatically displayed on the monitor if **Auto Redisplay** is also selected in the Prescan Preferences. Otherwise to see the effect of the Autoscan you will need to re-display the image using the **Redisplay** option from the **Image** menu.

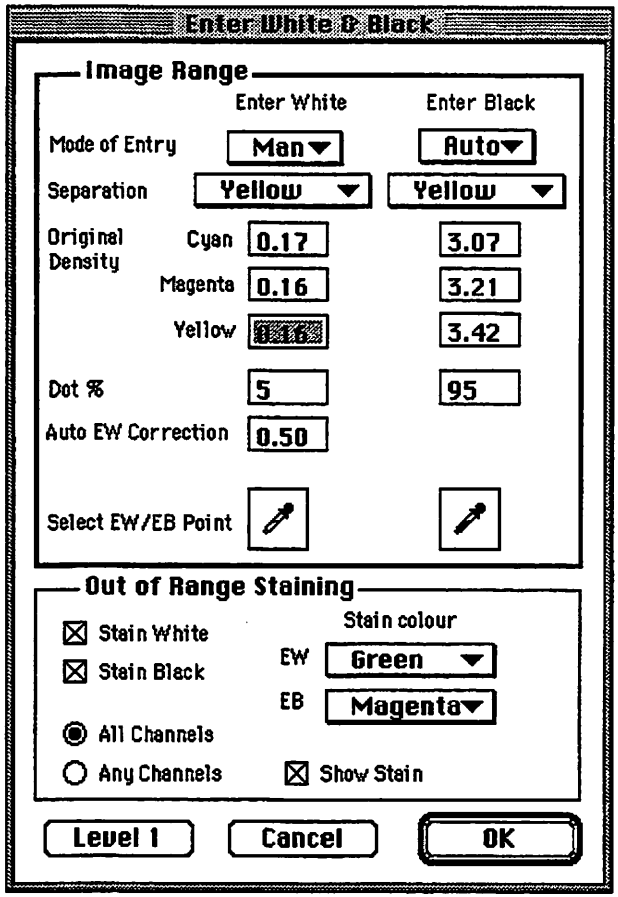
An Autoscan should be performed if the cropping has changed the image such that the previous Enter White and Enter Black points are now unsuitable. It will be of particular use when a coarse crop was performed on the scanner and included areas surrounding the original.

6.3.2 Enter White and Black

Note: Those setups which are common to any image can be specified from the Setup Sheet menu. Information on the Mode of Entry, Separation, Dot % and the Auto EW Correction functions is provided in Section 5.6.

Select **Enter White & Black** from the Job Sheet pull-down menu.

Show Values and Sample Points may be of use during the EW/EB procedure. To display these windows select **Show Points** from the **Image** menu.

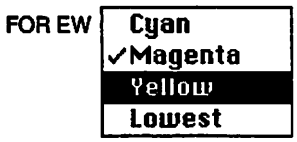


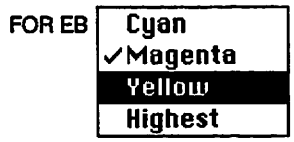
Original Density, Dot % and the Eye Dropper

The Enter White and Black window displays the yellow, magenta and cyan original densities and the dot percentage values at the Enter White and Enter Black points.

The Mode of Entry is drag-selected from the menu and applies to both Enter White and Enter Black.

The separation is drag-selected from the menu.





The displayed densities can be those either chosen by Autoscan or set previously by the operator at the scanner. Fresh density values may be entered into the Original Density data boxes in a manner similar to Cal 28/29 on the scanner, or can be selected using the EW/EB point eye dropper tool. Changing the densities will give you the displayed Dot % at that point, or a fresh Dot % may be entered.

Density and Dot % values can be measured by just placing the pointer or eye dropper on the image and observing the readings in the Show Values window.

If you enter a new Dot % value, click on the dropper box and move the dropper over the image to see the new readings in Show Values.

The dropper may also be used in conjunction with Sample Points. Click on EW or EB then click on one of the Sample Boxes and then click on the point you wish to sample on the image. See Section 6.2.3 *Image Colour Editing.*

Whilst it may be good operator practice to select the Luminosity Curve required before changing EW and EB (this is particularly important on the scanner), if you should choose a different luminosity curve after EW and EB, the Macintosh Application will carry out the necessary calculations so there is no need to re-enter EW and EB.

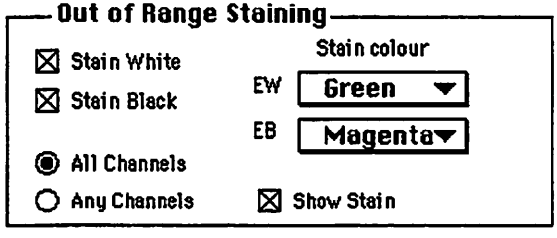
- The Original Density value must be in the range 0 to 4.0.
- The Dot Percentage value must be in the range -10 to 110% (or 0 to 100% for RGB scanning).

Manual Enter Black on a Colour

Manual Enter Black on a colour is a complicated calculation, and although the system will try to give the best possible result, this should be carefully checked. If the result is not satisfactory try re-entering EB perhaps using a different area of the image and/or a different mode of entry. Alternatively, change the original density.

Out of Range Staining

This function allows you to see easily which areas of the image are below the Enter White point and above the Enter Black point. Out-of-range staining is only an assessment tool and has no effect on the output image.



If the **Out of Range Staining** function is not already displayed, click the **Level 2** button.

To stain highlight areas below the specified Enter White point, check the **Stain White** box. The colour which will be used to stain these areas is displayed in the **Stain Colour, EW** menu header. To change the stain colour, choose an option from the menu.

To stain shadow areas above the specified Enter Black point, check the **Stain Black** box. The colour which will be used to stain these areas is displayed in the **Stain Colour, EB** menu header. To change the stain colour, choose an option from the menu.

You can select whether staining will appear:

- if at least one colour channel is out of range (click **Any Channels**),

- or only if all channels are out of range (click **All Channels**).

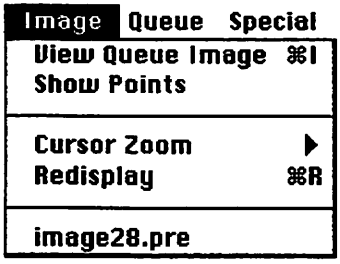
To see the staining, check **Show Stain**, then re-display the image.

6.3.3 Image Colour Editing

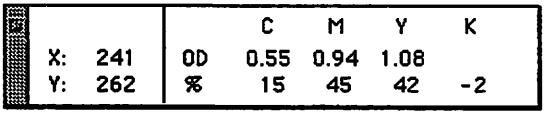
Use the **Image** menu option, **Show Points**, to display the image CMYK parameters in the Sample Points and Show Values windows. Use the **Image** menu **Cursor Zoom** function to examine the image in more detail. Use the **Image** menu **Redisplay** function to redisplay the image with the edits included.

Show Points

On the **Image** menu select **Show Points** to display the Show Values and Sample Points windows.



Show Values



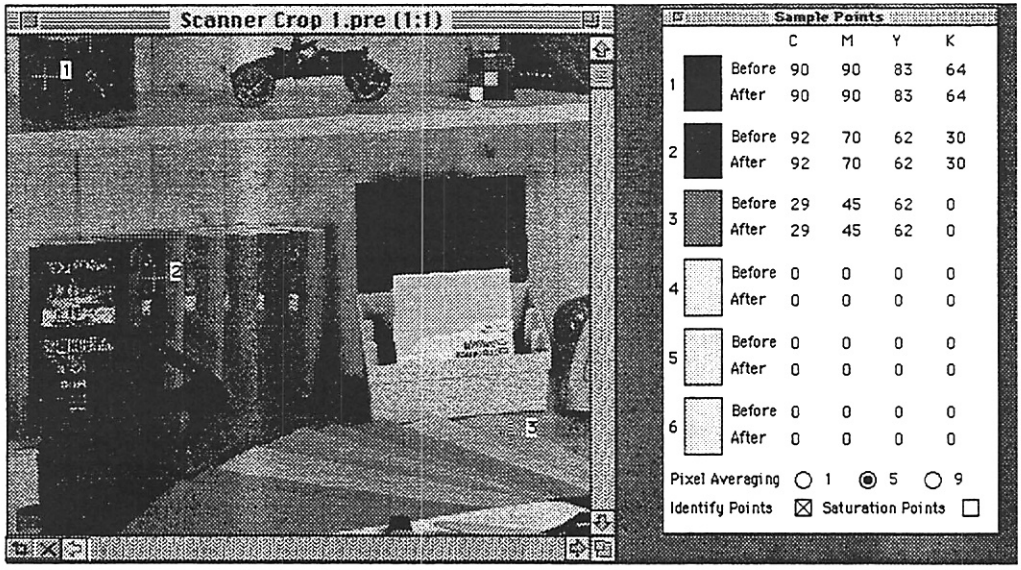
Position the mouse pointer on the Prescan image to read off the Original Density (OD) and Dot Percentage (%) CMYK values at the pointer position. Readings from HR RGB images are displayed in digital values (range 0 to 254) rather than dot %. Use

the Cursor Zoom function (see below) to position the pointer more accurately.

Sample Points

Sample points can be used to display the CMYK values of six selected points on an LR image so that you can observe the effect of changes made when editing scan parameters such as EW/EB, Cast, Tone, Luminosity etc.. Sample Points cannot be used on HR images See Chapter 5 *Setting Scan Parameters* for more details.

You can select the area of the sample point. The point can be a single pixel or an average of an area of either five or nine pixels.


Scanner Crop 1.pre (1:1)
Sample Points
C M Y K
1 Before 90 90 83 64
After 90 90 83 64
2 Before 92 70 62 30
After 92 70 62 30
3 Before 29 45 62 0
After 29 45 62 0
4 Before 0 0 0 0
After 0 0 0 0
5 Before 0 0 0 0
After 0 0 0 0
6 Before 0 0 0 0
After 0 0 0 0
Pixel Averaging 1 5 9
Identify Points Saturation Points

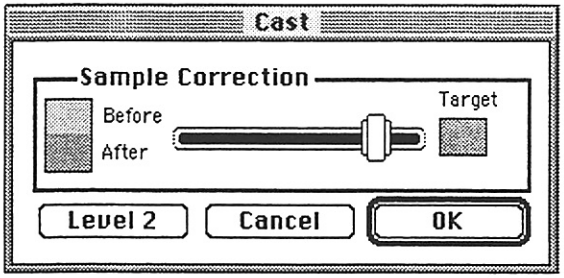
On the Sample Points window click on a sample box then move the mouse pointer to the required sample position on the image and click on it. The colour at the sample point is then displayed with the CMYK values. Repeat the process for the other two points on the image. Select the **Identify Points** checkbox if you want to identify the position of the sample points on the image.

Move the Sample Points window to a convenient position on the desktop then use the **Job Sheet** pull-down menu to alter the CV settings. Any alteration that affects the sample points will be shown in the lower portion of the colour sample and the new CMYK values will be displayed in the **After** data boxes. For further information on the C.V. settings see Chapter 5 *Setting Scan Parameters*.

If the Saturation Points box is checked:

- The sample boxes show the most saturated colour in each of the colour regions: Cyan, Magenta, Yellow, Red, Green and Blue.
- The corresponding data for each separation is displayed along side each box.
- Crosses appear in the image, indicating the most saturated point for each of the colour regions.

Cast



The Level 1 option allows a sampling method to be used to perform cast correction.

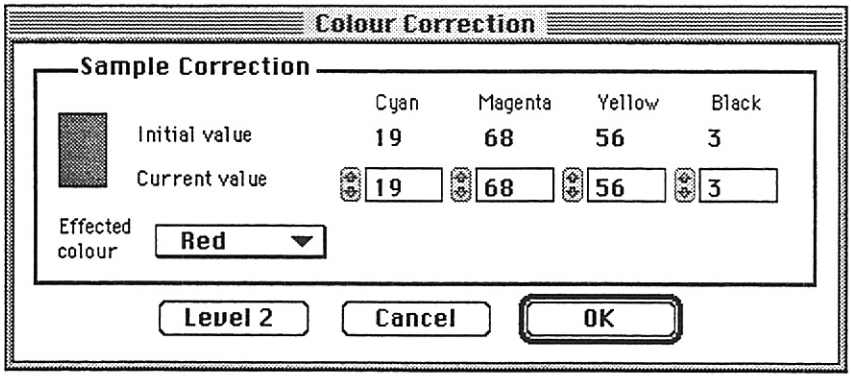
To perform a correction, click in the sample colours box. Move the pointer to the image and select the point to be sampled. If you want to sample a saturated colour you can, as an alternative, sample from any sample colours box in the Sample Points window (with **Saturation Points** checked).

Use the slider to adjust to the level of cast correction required. The correction will only be applied to the tonal region of the sample point.

Click on Level 2 on the Cast window to access other Cast functions. See Section 5.8 *Cast* for further information.

Colour Correction

The Colour Correction function allows you to change the CMYK values of the colours on an image. On the Job Sheet window select the **Job Sheet** pull-down menu, then select **Colour Correction** from the menu. The Colour Correction Level 1 window is displayed.



Click on the **Sample Correction** box. Move the mouse pointer to the position you want to sample and click on it. The colour at the sample point is displayed with the CMYK values. You can use the **Cursor Zoom** function on the **Image** menu to select the position of the sample more accurately.

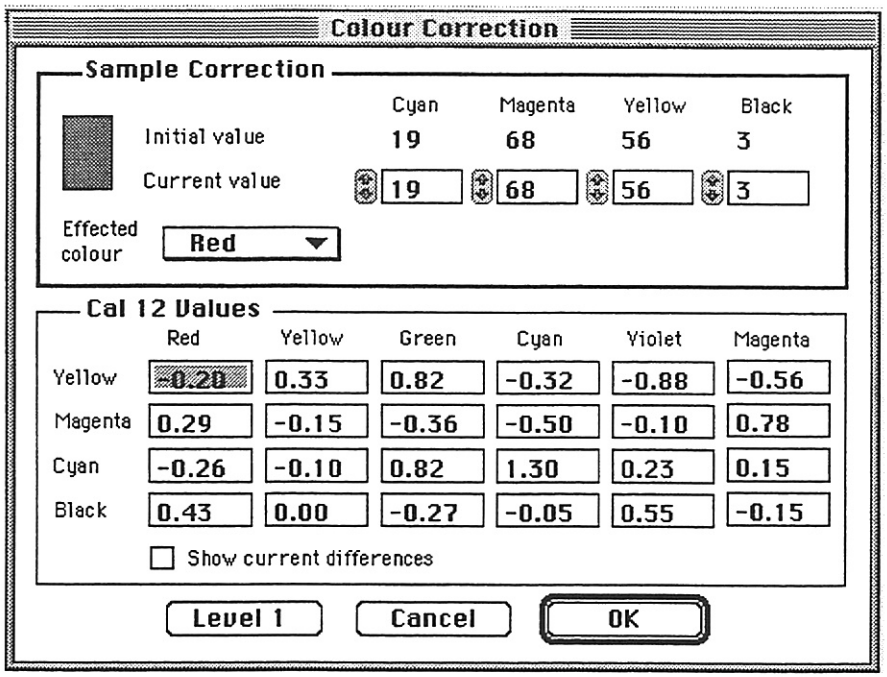
Alter the CMYK settings as required. The lower half of the sample box changes to display the new colour.

Select **Redisplay** on the **Image** menu (or click the re-display button at the bottom-left corner of the image) to redisplay the image with the new values.

The appropriate Effected Colour channel is selected automatically when you select a sample point. The channel is displayed in the Effected Colour menu. You can override this selection if you think that another colour is more appropriate.

Cal 12 Values

Click on Level 2 on the Colour Correction window to add the Cal 12 values.



To Use with Sample Points

To use the Sample Correction function with the Sample Points function:

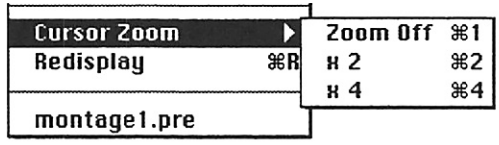
- Click on Sample Correction (in the Colour Correction window).
- Click on one of the sample boxes in the Sample Points window.
- Click on the image area you want to monitor.

The two functions are now locked together so you can use the identity points with Colour Correction for a reference aid. On the

Sample Points window check on the **Identify Points** box to add markers to the selected points on the image.

Cursor Zoom

On the **Image** menu select **Cursor Zoom** to display the Zoom sub-menu.

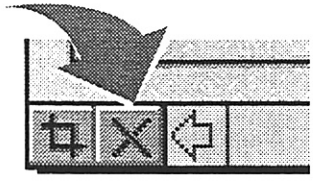


Select the required value to display an enlargement of the image at the pointer. Note the keyboard shortcut keys for easy use.

Redisplay ⌘R

On the **Image** menu select **Redisplay** to re-display the current scanned image to include any editing changes made via the scan parameter functions on the Job Sheet pull-down menu.

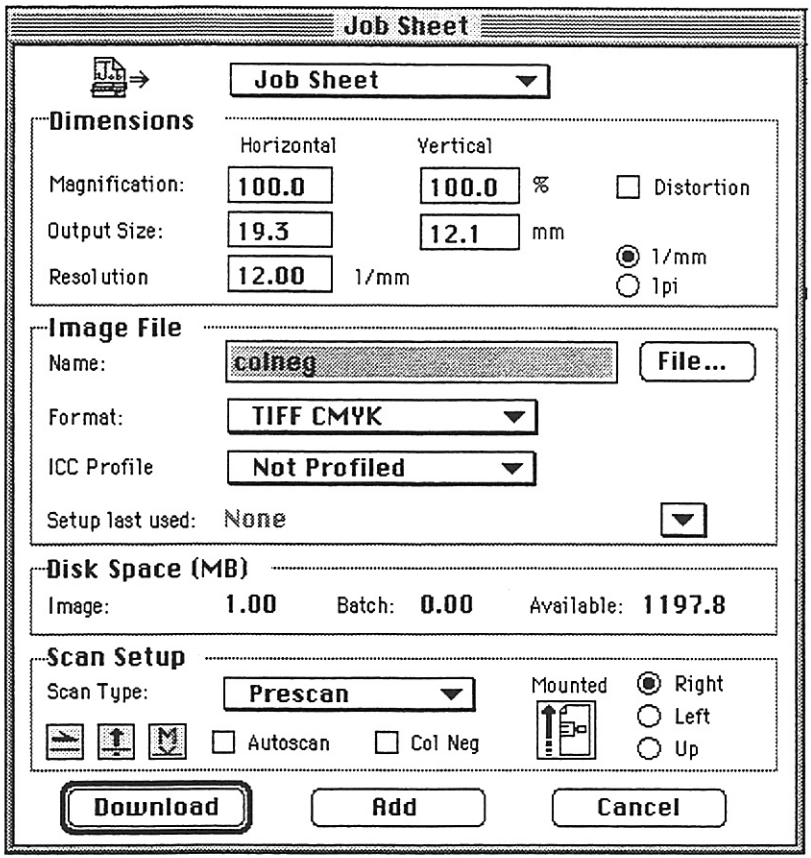
The active image can also be re-displayed by clicking the Re-display button at the bottom-left corner of the image window.



6.3.4 Job Sheet

When the prescan image has been cropped as described above the Job Sheet window is updated to display the selected dimensions.

If the image was not cropped, or if the Job Sheet is not open, click on the image displayed then on the **File** menu select **Job Sheet** to call up the Job Sheet window.

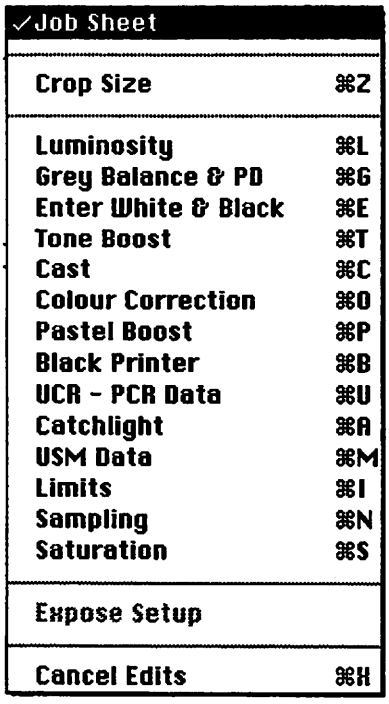


Note: Ensure that you do not select the wrong Job Sheet. If the Analyse Control window is currently selected when you click on **Job Sheet**, *then the Job Sheet for the NEXT scan will be displayed.*

If the Job Sheet or Job Sheet menu window is hidden under its image, you can bring the Job Sheet back to the top by pressing ⌘ and ***J*** *together.*

On the Job Sheet the Image Dimensions, Image File settings and Scan Setup can be altered to your requirements. The **Job Sheet** pull-down menu at the top of the window gives you access to the full scan parameter functions as described in Chapter 5 *Setting Scan Parameters*. Click on **Job Sheet** to display the menu. You

can also call up the Crop-Size tool from the Job Sheet pull-down menu.



The keyboard shortcuts only appear in the Job Sheet and Setup Sheet menus if the **[alt]** key is held down while the menu is selected.

Most of the options from this menu are described in Chapter 5. **Crop Size** is described in Section 6.3.1. The remaining option, **Cancel Edits**, is described in Section 6.3.5.

The functions provided on the Job Sheet window are described in the following sections:

Image Dimensions

The **Dimensions** data boxes display the current settings for the job. These settings are initially determined by the scanner settings when the job is first scanned, or may have been changed when using crop size.

The **Mode** radio buttons select either l/mm or lpi as the scanner resolution display.

- In the **lpi** mode the Analyse Control window controls the resolution to be used. (Using **Update** to get new values from the scanner will not change what the user has entered.)
- In the **l/mm** mode the resolution cannot be edited on the Analyse Control window, as the value entered on the scanner will be used. (Click **Update** to see the changes made on the scanner.)

The **Output Size** dimension units are determined by the preferred units set on the Preferences-General window. See Chapter 4 *Setting Preferences.*

The **Horizontal** and **Vertical Magnification** are identical unless the **Distortion** checkbox is selected. Set the Magnification you require in one data box and the other parameter is automatically adjusted. Selecting the **Distortion** checkbox allows you to set Horizontal and Vertical magnification independently.

Image File

The **Image File Name** data box displays the name of the Image File for the image. To change the name type in the new name.

The **Image File Format** data box displays the File Formats menu for you to select the required format. See Section 6.2 *Analyse Control.*

The Setup File required can be selected from the Setup file menu and the data merged instantly with the current job data (if a Setup file is selected from Analyse Control, the data is not merged until the job is scanned, edited or added to the queue).

The effect of this is that only one Setup file can be used from the Analyse Control window. On the Job Sheet, several partial Setup files can be merged. For instance, Colour Correction and Cast settings can be taken from one file and Tone shape and USM can be taken from another.

Autoscan may also be selected (see *Scan Setup* in Section 6.2.8) to give an automatic setup for the current image.

Note: Selecting **None** *as setup last used will not restore the setup to Basic Values.*

It may be a good idea to create a Setup file of Basic Values which can be selected to clear unwanted edits.

Disk Space

The **Disk Space** panel displays:

- the disk space required for the scan
- the disk space required for the current job and other jobs waiting in the queue, in the currently selected volume
- the total disk space available.

If the disk space required is greater than the total space available the values will be displayed in red.

Scan Setup

The **Scan Setup** allows you to select the Scan Type for the job, Autoscan, Lat Rev, transmission/reflection, Colour Negative input and the orientation of the scanned image. See Section 6.2 *Analyse Control.*

Download/Add

Clicking on **Download** will send the job parameters to the Scanner, update the data and display the Analyse Control window to initiate the scan. This function will not be available if the queue is running.

In Queue mode click on **Add** to add the job to the Scan Queue.

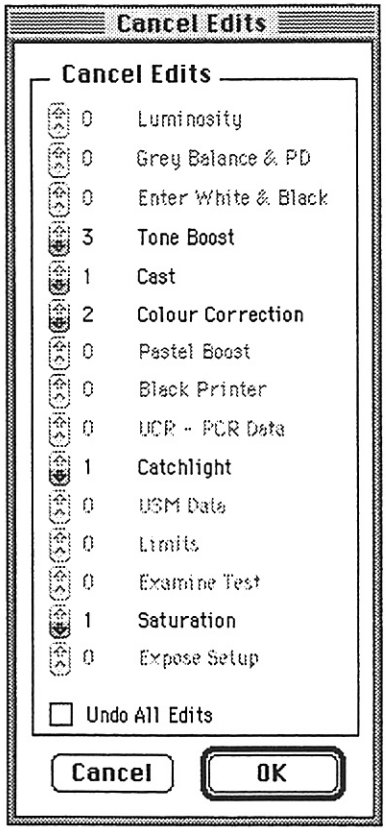
6.3.5 Cancel Edits

Edits performed on a prescan image can be cancelled so that the image reverts to its previous state. The Cancel Edit window is used to perform this function and is selected from the Job Sheet menu.

If you have visited a set-up window and edited it more than once it is possible to remove the individual edits. For example, if you have performed three separate edits within one set-up window the number, **3**, will appear next to that function in the Cancel Edits window.

- If you change this number to **2** the third (last) edit will be cancelled when **OK** is clicked.
- If you change the number to **1**, the second and third edits will be cancelled.

You can remove all edits from all set-ups by checking the **Undo All Edits** checkbox.



Edits which were performed on the scanner before the preview scan was performed will not be seen as edits in this window and cannot be removed. However, if the job is downloaded to the scanner those edits made on the scanner will be recognized. Even if all Macintosh edits are removed the **CANCEL EDIT** button on the scanner will light.

Edits applied automatically when an ICC profile was selected cannot be cancelled using this window.

6.4 Queue Control

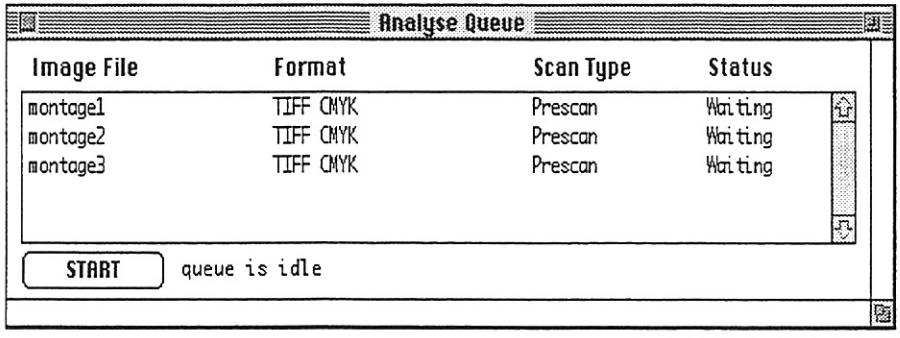
If you are normally running jobs from the queue rather than running one-off jobs from the Analyse Control window, select **Default to 'add' to queue** in the Queue Preference window.

6.4.1 Queues

The Analyse Queue window may be selected from the **Queue** menu when required. The Expose Queue option cannot be accessed from the menu with this scanner.

Click on **Start** to start this batch after all the required jobs have been loaded into the queue.

Analyse Queue



The Analyse Queue window can display the following parameters:

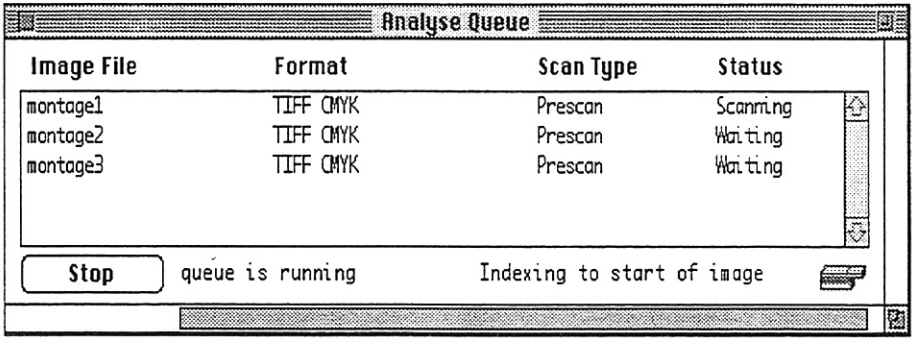
- Image Job File name.
- Setup File name.
- Dimensions of image.
- Image File format.
- Image Resolution.

- Scan Type.
- Scan Status.

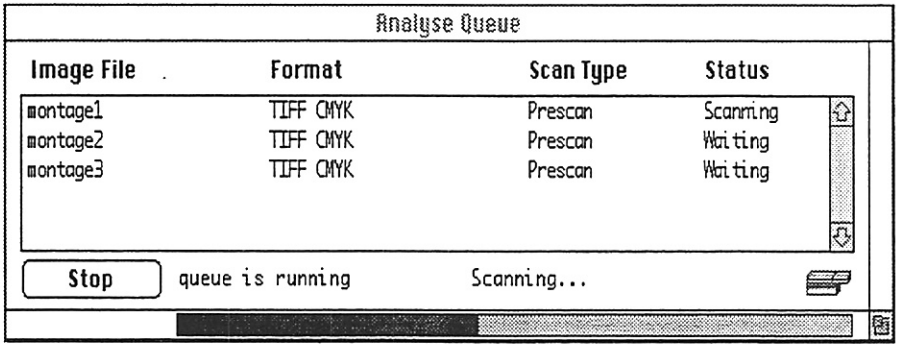
The parameters to be displayed in the queue are selected in the Preferences-Queue window. See Chapter 4 *Setting Preferences*. You can select any parameter for display according to your requirements.

While the queue is running the progress of the scan is shown on the Analyse Queue window.

First the scanner is indexed to the start of the image:



Then the image is scanned:

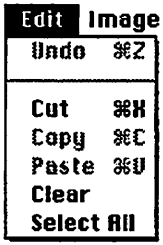


6.4.2 Job Editing

The Jobs in the queue can be modified by editing the queue using the Edit menu functions as described below.

Edit Options

The **Edit** menu is selected from the menu bar at the top of the workspace.



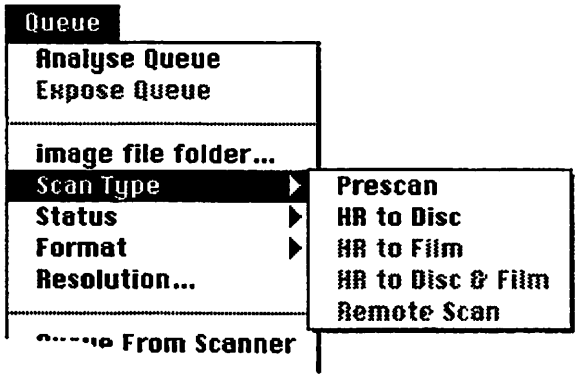
The Edit menu options are as follows:

- Cut, to delete a job from a queue.
- Copy, is not available.
- Paste, to add a cut job to the queue.
- Clear, to delete all the highlighted jobs in this queue.
- Select All, to select all the jobs in the queue.

Take care when selecting Jobs for cutting or clearing.

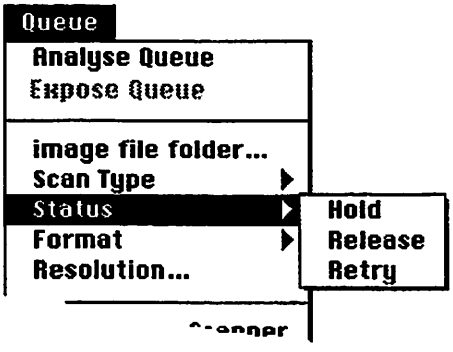
Scan Type

To change the scan type of a job in a queue highlight the job and then on the **Queue** menu select **Scan Type**. On the sub-menu select the scan type required.



Status

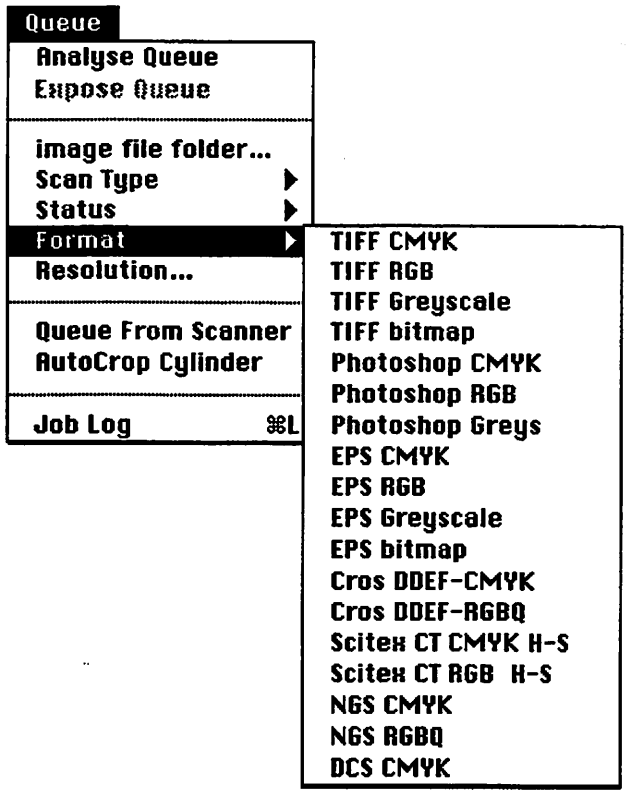
To change the status of a job in a queue highlight the job and then in the **Queue** menu select **Status**. On the sub-menu select the status required.



Only jobs of the same status may be changed as a group. If you are unable to change the status of a job or group of jobs, check that only jobs of the same status are selected.

Format

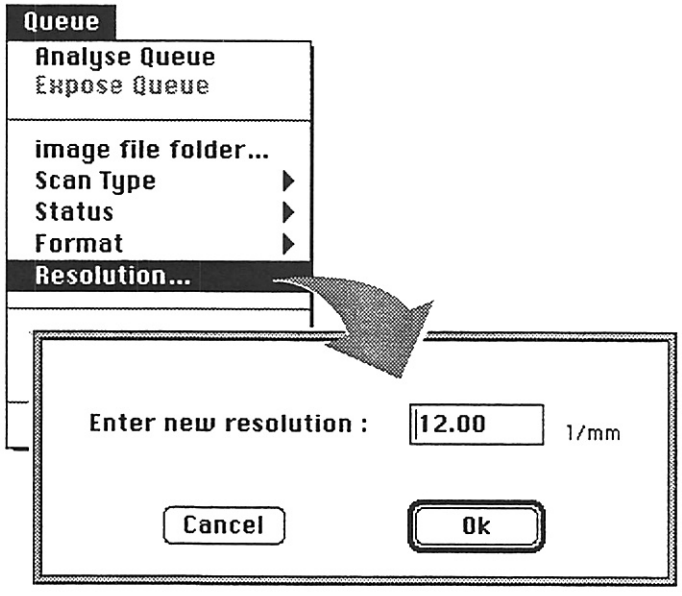
To change the format of jobs in the queue, highlight the jobs and choose the alternative format from the **Format** sub-menu.



Note: Only those formats which are suitable for the current scan setup will be available for selection. In particular, if an ICC profile has been selected, only ***TIFF RGB*** *will be available.*

Resolution

To change the resolution of jobs in the queue, highlight the jobs, then choose the **Resolution** option. A window is displayed which allows you to enter the new resolution. Enter the new resolution in the data box and click **OK**.

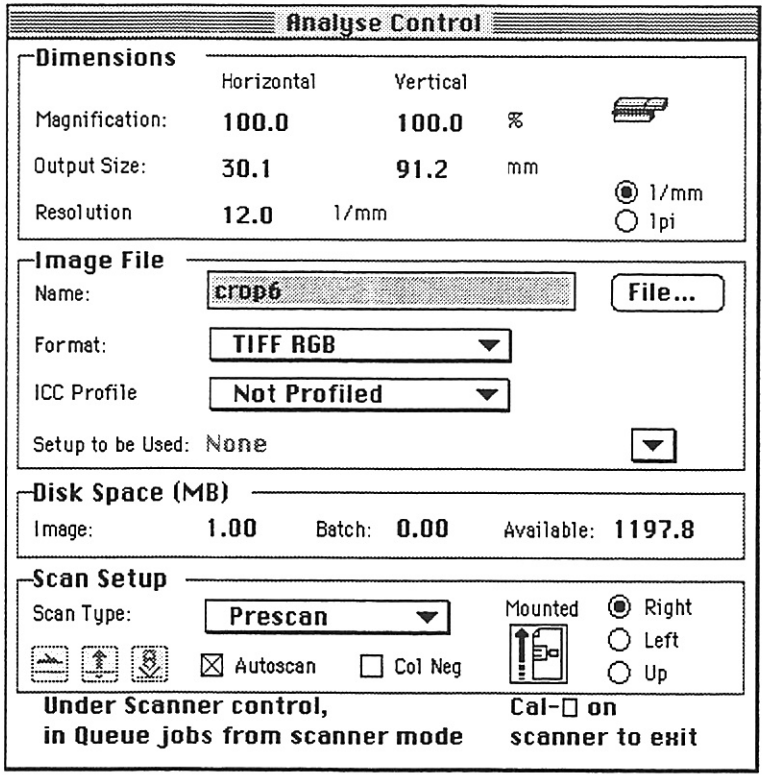


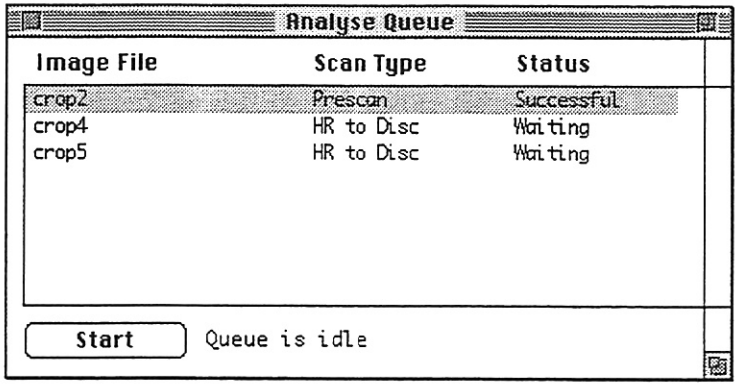
Queue from Scanner

This function allows you to set up each job on the scanner and then transfer it automatically to the Analyse Queue ready for scanning. On the **Queue** menu select **Queue from Scanner.**

The Analyse Control window is displayed in **Queue from Scanner** mode and should be set up so that the Jobs sent back

from the scanner have the correct file format, destination, orientation, etc.





Set up each job on the scanner and then use the **Job Save** button to upload to the queue.

Note: ***Auto Name Increment*** *must be selected in General Preferences.*

After setting up all the required jobs, press **[CAL]** and □ on the scanner to return control to the Macintosh.

Click **Start** on the Analyse Queue to start scanning.

Autocrop Cylinder

The Autocrop Cylinder function initiates a scan of the entire analyse cylinder area. This function is fully described in the Section 6.5.

Job Log

The **Job Log** option displays a log relating to all jobs highlighted in the Analyse or Expose queue.

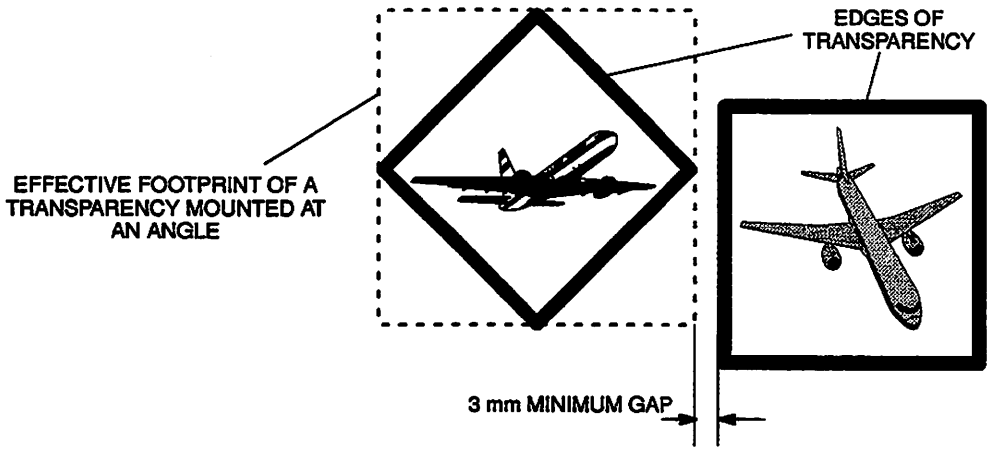
6.5 Autocrop

The Autocrop function allows any number of transparencies (but not reflection copy) to be pre-scanned in one pass and simultaneously cropped into individual images. An overview image is produced which will help you identify the individual images created and provide a quick method of opening them.

6.5.1 Mounting Transparencies on Drum

To enable the Autocrop function efficiently the following rules must be followed.

- **Minimum Size:** Transparencies must be a minimum of 15 mm wide and 15 mm high.
- **Minimum Gap Between Transparencies:** Transparencies must be separated by a gap of at least 3 mm. If the transparencies are not mounted square on the cylinder the gap must be measured from the smallest square with horizontal sides which encloses the transparency. See the following figure.



If the gap between transparencies cannot be identified they will appear as one larger image and can be separated later using the crop functions described in the previous section.

Note: Although the figure above shows a transparency mounted diagonally this should be avoided wherever possible to achieve optimum results from the Autoscan function. See Section 6.5.2.

- **Maximum Horizontal Gap:** The horizontal gap between transparencies must be less than 100 mm otherwise any transparencies beyond will not be found.

- **Orientation of Transparencies:** You can only select Heads Left or Heads Right options when using Autocrop. If you require output with heads up (often required when outputting in DDEF or NGS format) you will need to mount the transparencies heads-up and so view the images on their side on the monitor. (To view heads-up on the monitor in this case would require a rotation during Autocrop which is very slow.)

- **Mount Small Transparencies at the Left-hand End:** Images will be available for editing earlier if the smaller ones are mounted at the left-hand end of the cylinder.

- **Mounting Tape:** Transparent mounting tape will not normally be seen as part of the image unless it or the drum under the tape is particularly dirty. Transparent tape can normally be ignored when calculating the required gaps referred to above.

- **Overlay Sheets:** If a transparent overlay sheet is used on quality jobs the sheet should be continuous around the circumference of the drum otherwise a minor Autobalance error may occur.

- **Avoiding Start-of-Scan Line:** If you mount a transparency across the horizontal start-of-scan line it will be split on the overview image on the monitor. When the individual prescan of this image is opened the two halves of the image will be stitched but a 1.5 mm gap will appear at the join. On small transparencies such as 35 mm, this gap may be large enough to interfere with the assessment of the image.

  To avoid this problem you should not mount transparencies across the horizontal start-of-scan line. If you are not sure where this line is, or the cylinder has been removed and replaced since mounting the transparencies, you can reposition the vertical datum. Rotate the drum to a convenient

position, and then press **[CAL]** followed by **[→|]**, then **[ENTER]** .

Note: If you a likely to remove a cylinder from the scanner after starting an Autocrop scan you will need to provide a point of reference which can be used when reloading. The procedure is described in Chapter 5 of the associated scanner operator's manual.

*If you have point of reference on the cylinder you can use that to determine the location of the horizontal start-of-scan line and mount transparencies accordingly. The **[CAL] [→|]** procedure then becomes unnecessary.*

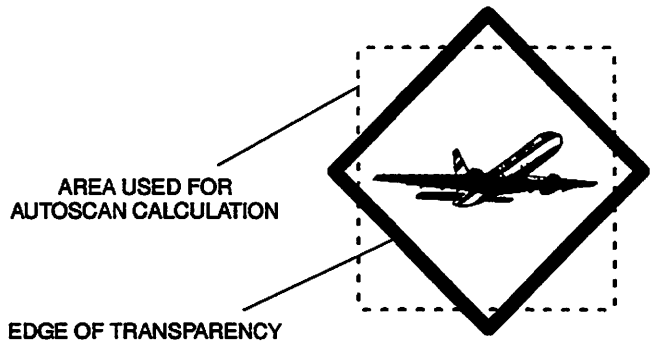
- If dynamic Autobalance is active a valid Autobalance point must be identified. If dynamic Autobalance is not active an Autobalance must be performed. For more information, refer to the associated scanner operator's manual.
- A manual focus must be performed before an Autocrop as Autofocus is not active during the main Autocrop scan.

6.5.2 Using Autoscan with Autocrop

An Autoscan is automatically performed on each separate image. In most cases the result will provide satisfactory Enter White and Enter Black points. To avoid problems with the edges of transparencies influencing the Autoscan calculation the outer 10% is normally excluded from the calculation. If a 35 mm transparency is detected the excluded area is increased to 20% along the perforated edge.

Border regions will however, still be included in the calculation:

- If transparencies are mounted too close together so that they cannot be separated, the white area between the transparencies will be included in the Autoscan calculation,
- If transparencies are not mounted with vertical and horizontal edges most of the area within the squared up rectangle and most of the black edge of the transparency will be included in the Autoscan calculation. See the figure below,



- If dirty tape or a dirty cylinder is used it may affect the calculation of the edge and include the tape area in the Autoscan calculation,

If the results of the Autoscan are not satisfactory a repeat Autoscan can be quickly made on the cropped image after the Autocrop scan has been performed.

6.5.3 Using Autobalance with Autocrop

Autocrop will locate up to 15 Autobalance positions along the cylinder (by searching for the cleanest areas). For each image it locates it will allocate the nearest Autobalance point. If clear patches cannot be found a manually set Autobalance point will be required. For this reason it is necessary to perform an Autobalance immediately before starting an Autocrop scan.

6.5.4 Using Autofocus with Autocrop

If you want to run some of the HR scans with a predefined manual focus and some using Autofocus, before starting Autocrop set the focus and switch off Autofocus. Autofocus can then be switched on for those jobs in the queue which require it, before the HR scan is started.

Note: Autofocus is recommended as it gives consistently sharp results.

6.5.5 Starting an Autocrop Scan

Set up the Analyse Control window with appropriate settings. Remember that any changes you make later will have to be repeated for each image to which the change is to be applied.

An Autocrop scan is initiated by choosing **AutoCrop Cylinder** from the **Queue** menu.

6.5.6 Autocrop Prescan Images

As images are created they appear as jobs on the Analyse Queue window. They will be auto named using the current root name in the Analyse Control window. The overview image will appear last, or nearly last, in the list as image **xxx.ac-0**.

Images can be opened and edited as soon as they appear. Alternatively you can wait until the scan is complete and use the overview image to make a selection.

To open the overview image, highlight **xxx.ac-0** and choose **View Queue Image** from the **Image** menu (or double click on the **xxx.ac-0** Job). The Job, **xxx.ac-0**, is treated as a special case and the job sheet for it is not normally opened.

Each separate image is indicated with a dotted box around its perimeter. If the Autocrop function has failed to separate images they will appear within the same box.

Autobalance points are indicated on the image by small red crosses.

To view any individual image, double click on the image. It will open together with its Job Sheet. This image can now be edited in the normal manner.

6.5.7 Auto Negative Detection

If **Auto Negative Detection** is switched on in the Prescan Preferences, the system will display negative images as positives

on the monitor. If Auto Redisplay is selected, the overview and individual images will be displayed as follows:

- If less than 75% of transparencies are negatives the overview will display the images without any inversion: negatives will appear in negative form and positives will appear in positive form. When a negative image is opened it will then be inverted so that it is displayed as a positive.
- If more than 75% of transparencies are negatives the overview will display the images inverted so that negatives appear in positive form and positives appear in negative form. When a positive image is opened it will be re-inverted so that it is displayed as a positive.

6.5.8 HR Image names

If DDEF or NGS formats are selected the name suffix, **.ac-1, ac-2** etc will be overwritten when scanning the HR image. To give each HR image a unique name and ensure that the queue will run it will be necessary to change the image file name in the Job Info dialog box when editing the prescan.

6.6 Special Options

The Special menu provides access to the following Special Options.

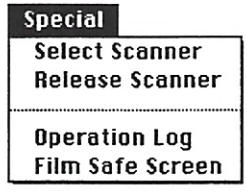
6.6.1 Select Scanner

The Special Menu includes a **Select Scanner** option. This is because the Celsis™ application can be connected to more than one scanner.

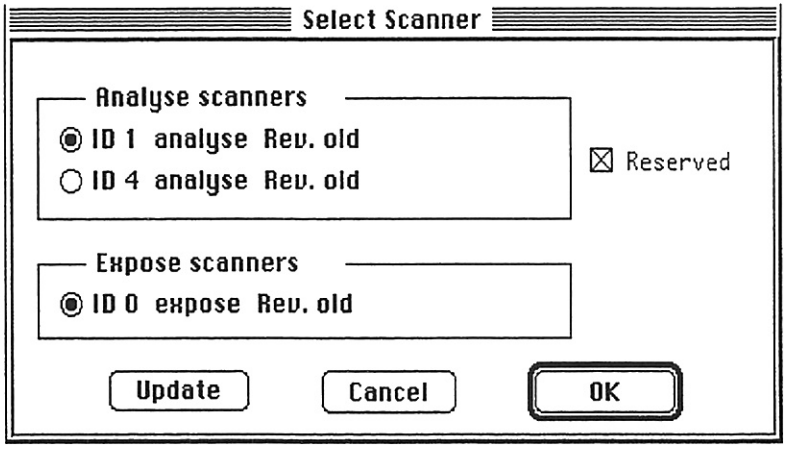
The Celsis™ application features a facility which lists all the scanners connected, by SCSI ID, and allows the selection of one of these scanners for an operation. For a basic Celsis™ 6250 installation however, the display shows only the one scanner connected (this scanner is automatically selected when the Celsis™ application is started). The display is useful in identifying scanner model and configuration.

To view the scanner information:

- Select **Select Scanner** from the **Special** menu at the top of the desk top:



The **Select Scanner** window is displayed.



Click on **OK** to confirm selection.

Note: There may be a short delay before the scanner is selected. Update will check the scanner(s) connected. Once selected by clicking on the radio buttons the scanner must be reserved by clicking on the ***Reserved*** *checkbox.*

6.6.2 Release Scanner

Select **Release Scanner** on the **Special** menu to release the Scanner for other users to access.

6.6.3 Operation Log

Select **Operation Log** on the **Special** menu to display the Operation Log window. This displays a history of the operations performed by the system. This can be used as a diagnostic tool.

Workflows 7

This chapter provides a description of a set of workflows that can be used with the Celsis™ 5250/6250 (C.A.S.C.) system. The workflows guide you step by step through typical sequences of operations to enable you to achieve the best results.

7.1 Workflow 1 - Autocrop and Macintosh Setup

This workflow is potentially the most productive for transparencies. A single prescan is performed to include all images on the cylinder. The Autocrop facility performs a coarse crop around each individual image. As each prescan image is cropped it appears in the queue and can be selected, fine cropped and edited. It is then added to the queue as an HR scan.

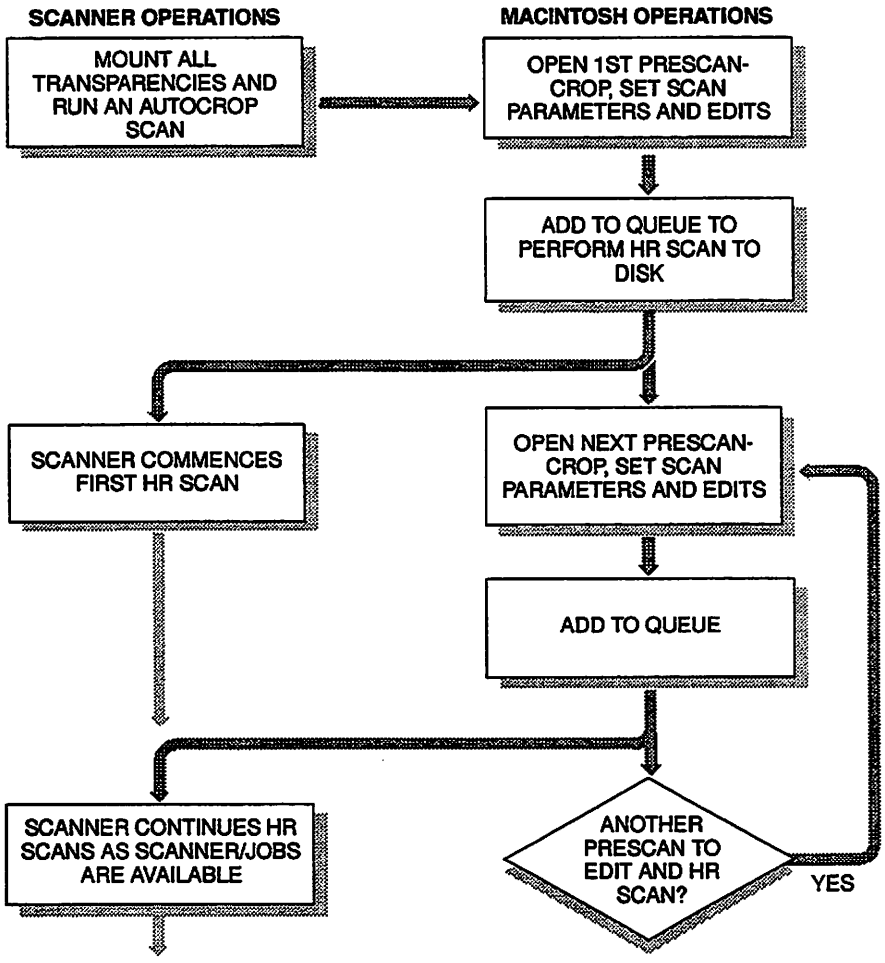

SCANNER OPERATIONS
MACINTOSH OPERATIONS
MOUNT ALL TRANSPARENCIES AND RUN AN AUTOCROP SCAN
OPEN 1ST PRESCAN-CROP, SET SCAN PARAMETERS AND EDITS
ADD TO QUEUE TO PERFORM HR SCAN TO DISK
SCANNER COMMENCES FIRST HR SCAN
OPEN NEXT PRESCAN-CROP, SET SCAN PARAMETERS AND EDITS
ADD TO QUEUE
SCANNER CONTINUES HR SCANS AS SCANNER/JOBS ARE AVAILABLE
ANOTHER PRESCAN TO EDIT AND HR SCAN?
YES

Figure 7.1 Workflow 1 - Autocrop and Macintosh setup

Transparencies are mounted on the analyse cylinder, observing the Autocrop requirements with regard to position and spacing.

Job parameters are set up on the Macintosh.

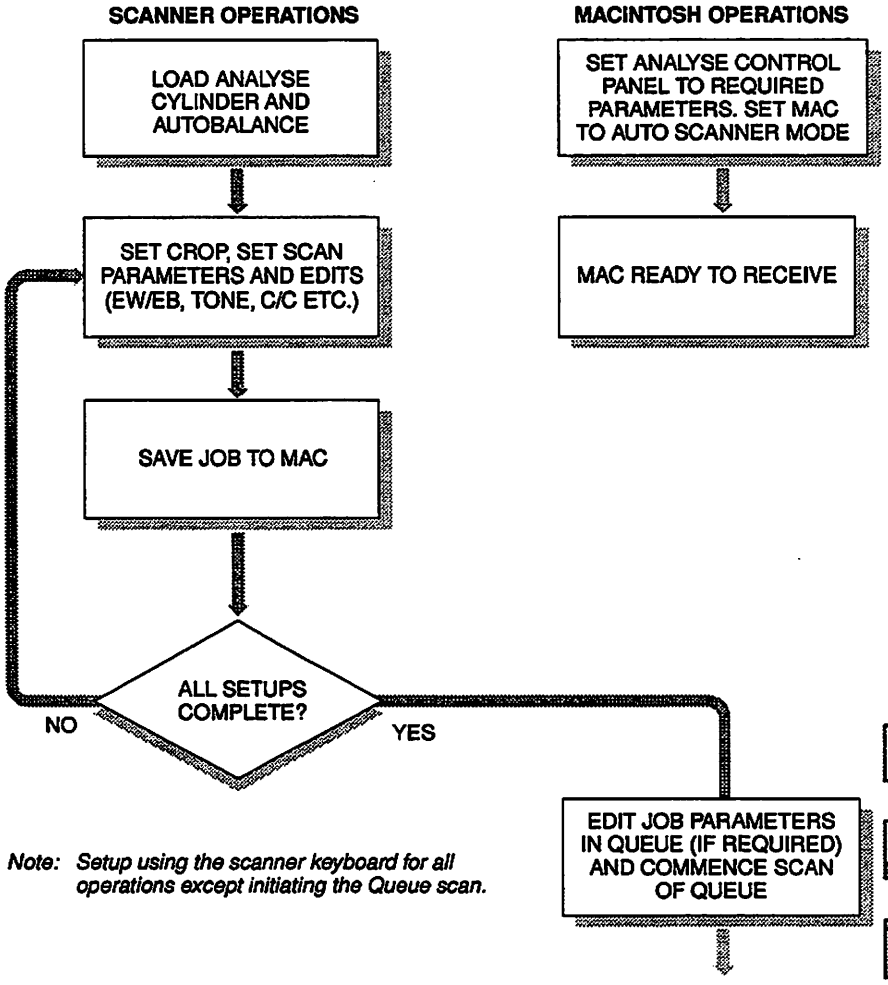
An Autocrop scan is started by selecting **Autocrop Cylinder** from the **Queue** menu.

As each image is scanned and cropped it appears in the Analyse Queue. It can be opened, edited (including a re-Autoscan if required) and added to the queue as an HR scan.

Alternatively you can wait until the Autocrop scan is complete. An overview image can then be opened (use **View Queue Image** from the **Image** menu) showing all images scanned and identifying the crop outline of each. An image can then be selected by double clicking on the image, then edited and added to the queue as an HR scan.

7.2 Workflow 2 - Queue from Scanner

This workflow uses the scanner to set up a batch of images for scanning. The scans can be prescan-to-disk or HR-to-disk. This method requires a high level of skill in operating the scanner. The Celsis™ application is only used to control the batch queue.


SCANNER OPERATIONS
MACINTOSH OPERATIONS
LOAD ANALYSE CYLINDER AND AUTOBALANCE
SET ANALYSE CONTROL PANEL TO REQUIRED PARAMETERS. SET MAC TO AUTO SCANNER MODE
SET CROP, SET SCAN PARAMETERS AND EDITS (EW/EB, TONE, C/C ETC.)
MAC READY TO RECEIVE
SAVE JOB TO MAC
ALL SETUPS COMPLETE?
NO
YES
EDIT JOB PARAMETERS IN QUEUE (IF REQUIRED) AND COMMENCE SCAN OF QUEUE

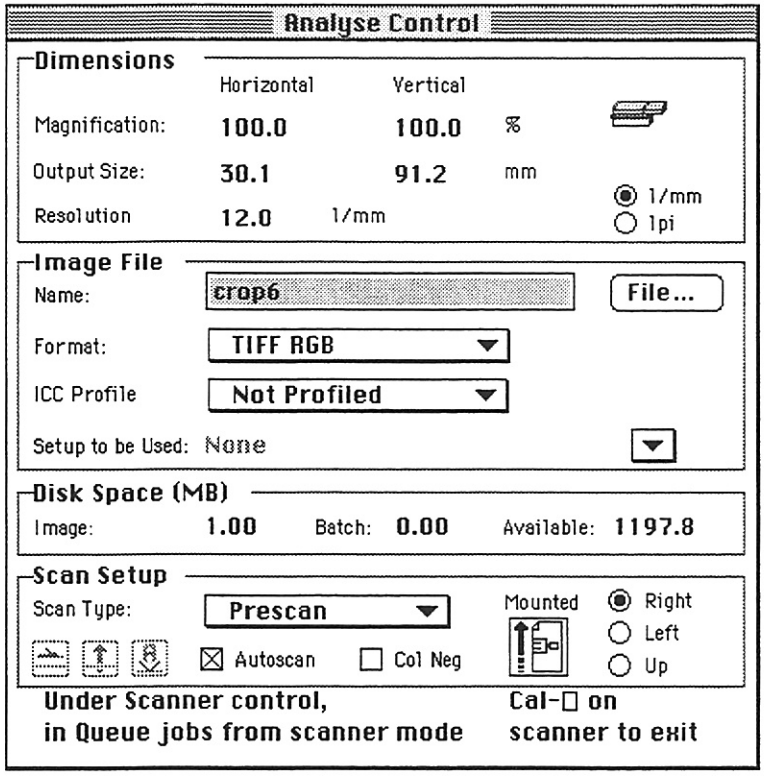
Note: Setup using the scanner keyboard for all operations except initiating the Queue scan.

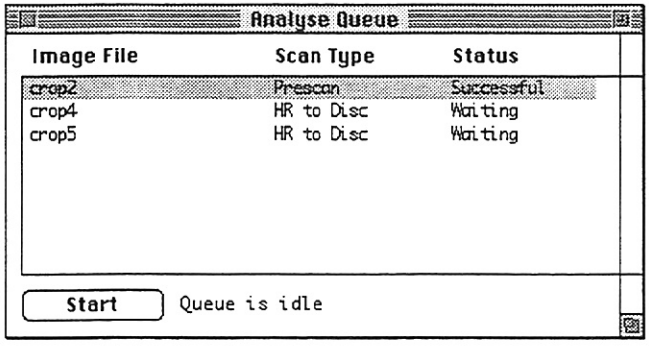
Figure 7.2 Workflow 2 - queue from scanner

On the Macintosh open the Celsis™ application if not already running, or select **Celsis 6000**.

Select the **Queue** menu from the menu bar.

Select **Queue from Scanner**. The Analyse Control window is displayed in Queue from Scanner mode.

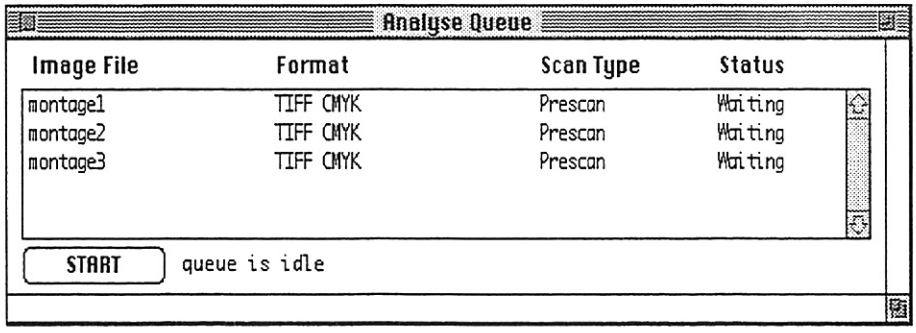




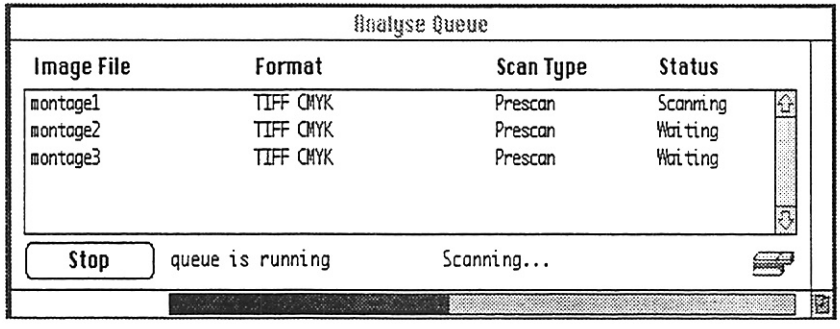
On the scanner set up each image scan as required. When you have completed setting up the queue press the **[CAL]** and □ buttons on the scanner (on scanners with the simplified keyboard, such as the Celsis™ 5250 (C.A.S.C.), press **[CAL]** and **[POSN]**).

On the Macintosh the Analyse Control window changes to normal mode. Click on **Add** to initiate the scan sequence.

The Analyse Queue window is displayed.



Click on **Start** to start the scans. As each image is scanned progress if the scan is shown in the Analyse Queue window.



Click on **Stop** to stop the batch at any time.

When all the scans have been completed the status is shown as satisfactory.

7.3 Workflow 3 - Concurrent Setup

This workflow uses the Macintosh for almost all parameter definitions. prescans are performed as in Workflow1, except that the only parameters that need to be set on the scanner for the prescan are crop, focus and mode of Autoscan. The images can be edited while the prescans are still in the queue being scanned. This method provides the optimum throughput.

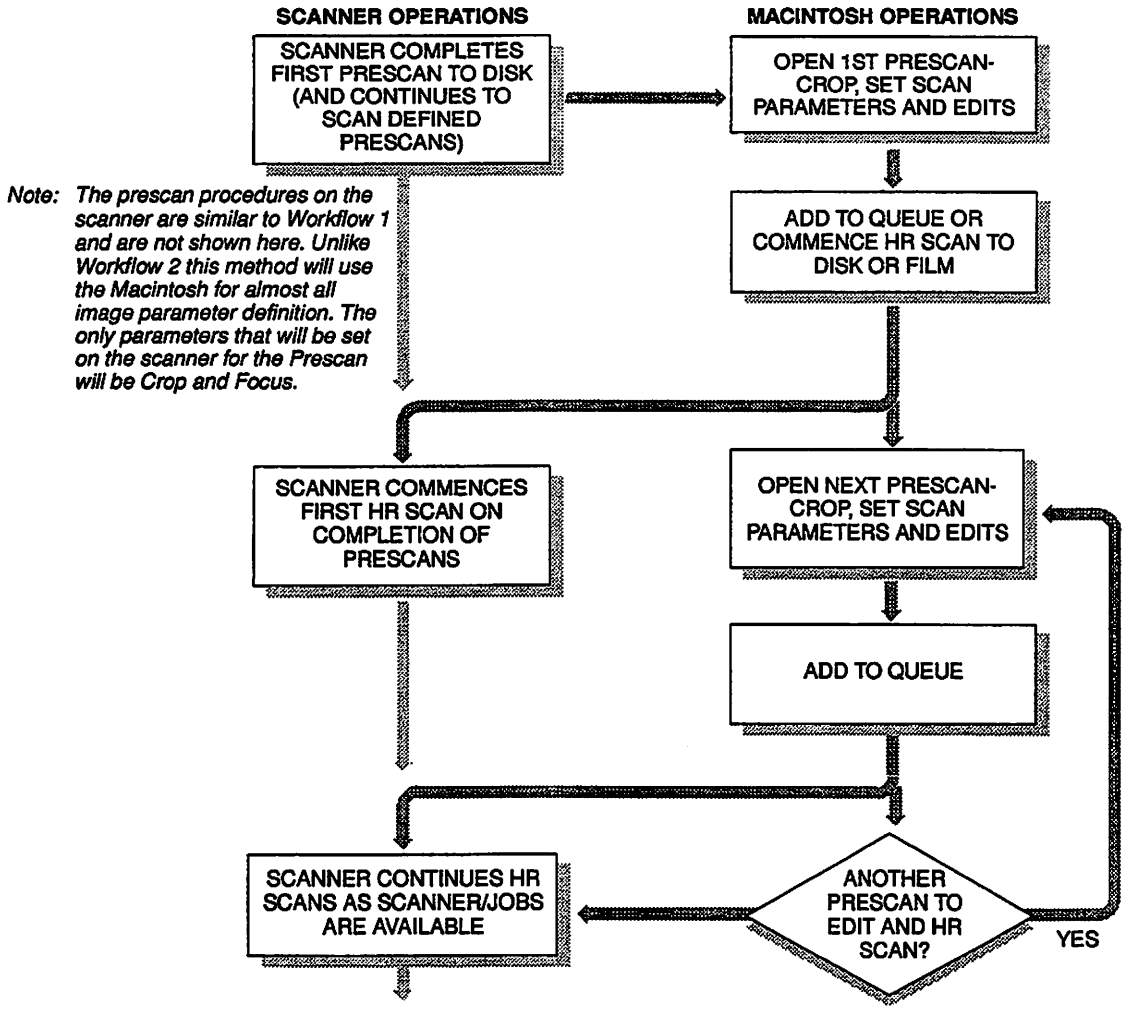
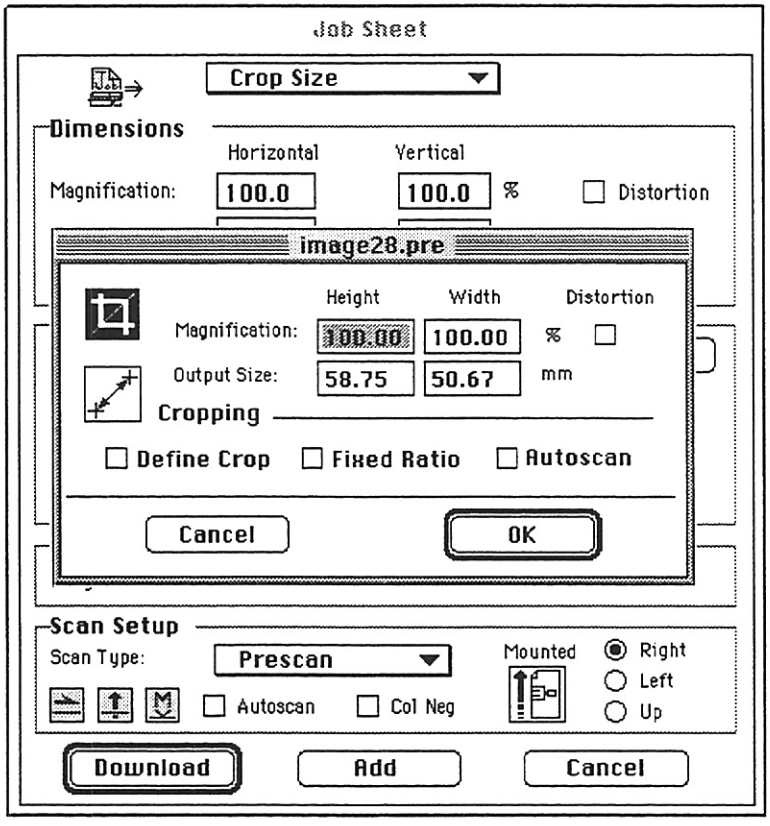
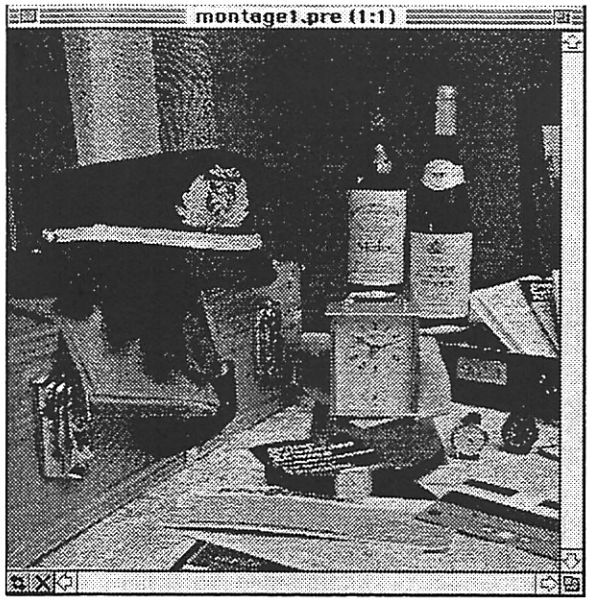

SCANNER OPERATIONS
MACINTOSH OPERATIONS
SCANNER COMPLETES FIRST PRESCAN TO DISK (AND CONTINUES TO SCAN DEFINED PRESCANS)
OPEN 1ST PRESCAN-CROP, SET SCAN PARAMETERS AND EDITS
ADD TO QUEUE OR COMMENCE HR SCAN TO DISK OR FILM
Note: The prescan procedures on the scanner are similar to Workflow 1 and are not shown here. Unlike Workflow 2 this method will use the Macintosh for almost all image parameter definition. The only parameters that will be set on the scanner for the Prescan will be Crop and Focus.
SCANNER COMMENCES FIRST HR SCAN ON COMPLETION OF PRESCANS
OPEN NEXT PRESCAN-CROP, SET SCAN PARAMETERS AND EDITS
ADD TO QUEUE
SCANNER CONTINUES HR SCANS AS SCANNER/JOBS ARE AVAILABLE
ANOTHER PRESCAN TO EDIT AND HR SCAN?
YES

Figure 7.3 Workflow 3 - concurrent setup

On the Macintosh select the first image in the Analyse Queue as soon as the prescan has been completed. On the **Image** menu select **Crop Size**. The Job Sheet window and the Crop Size

window are displayed, the prescan image is displayed in the Prescan window.





Crop and/or Size the image if required, see Section 6.3 *Prescan and Image Editing*, then click on **OK** to confirm. The Crop Size window closes and you can now access the Job Sheet.

On the Job Sheet change **Scan Type** to HR Scan to Disk. You can now make any adjustments required as described in Workflow 2 above.

When all the settings have been completed satisfactorily click on **Add** to add the changes to the job in the Analyse Queue. The scan will be performed as soon as the prescans are completed.

Repeat the above process for the other prescans in the queue. Where an HR Scan to Film is selected the Expose Queue window will be displayed with the image status.

The positions of scans in the queue can be altered by use of the Edit menu functions to alter the sequence of scans, see Section 6.4 *Queue Control.*

TOC

Help and Error Messages 8

This chapter lists the possible help and error messages which may be displayed during Celsis™ application operation, with a brief description of what to do in each case. The messages are listed in alphabetical order.

Error messages:

- **A Null pointer or file handle was detected. Please restart the program.**

Follow the instruction.

- **An attempt was made to delete a non-existent file**

Retry the operation. If the problem persists call customer services.

- **An attempt was made to free a null pointer**

Retry the operation. If the problem persists call customer services.

- **Attempt to delete file failed**

Retry the operation. If the problem persists call customer services.

- **Couldn't find any valid scanners on the SCSI bus... Check connections and status of attached scanners**

Follow the instructions. If the problem persists call customer services.

- **Error accessing folder**

Either: a) The folder selected for batch execution has no files of the correct type (i.e. jobfiles for analyse or trade scans, or image files for expose scans), or b) The folder selected could not be opened by the application.

- **Error Opening file : <filename>**

Try again. The volume may be locked - see the Macintosh documentation. If the problem persists change to another storage device, or see note below.

- **Error reading file : <filename>**

Try again. If the problem persists change to another storage device, or see note below.

- **Error writing to file : <filename>**

Try again. If the problem persists change to another storage device, or see note below.

- **File Operation Failed because Create failed**

Try again. The volume may be locked - see the Macintosh documentation. If the problem persists change to another storage device, or see note below.

- **File Operation Failed because Delete failed**

Try again. The volume may be locked - see the Macintosh documentation. If the problem persists change to another storage device, or see note below.

- **File Operation Failed because FSRead failed**

Try again. If the problem persists change to another storage device, or see note below.

Note: Also try resetting the Macintosh, checking that sharing is turned off, checking permissions (using the ***file, get info command****), and/or referring to troubleshooting information in the Macintosh documentation.*

- **File Operation Failed because Open failed**

Try again. The volume may be locked - see the Macintosh documentation. If the problem persists change to another storage device, or see note on previous page.

- **File Operation Failed because SetFPos failed**

Try again. If the problem persists change to another storage device, or see note on previous page.

- **File Operation Failed because the format specified is not supported**

Convert file format to either TIFF or Photoshop™ CMYK.

- **File Operation Failed because we could not add the Photoshop ® resource**

Try again. If the problem persists change to another storage device, or see note on previous page.

- **File Operation Failed because we could not allocate the contiguous memory we need on disk**

Free up space on the storage device or scan to a different storage device.

- **File Operation Failed because we were not able to set the end of file**

Free up space on the storage device or scan to a different storage device.

- **Internal Failure. An impossible case has arisen.**

Check that the preferences folder in the system folder contains a valid copy of the Celsis™ application preferences file. If not then trashing the preferences file then restarting the Celsis™ application causes a new preferences file to be created in the preferences folder. If this doesn't work try restarting the Macintosh. If the problem persists refer to the troubleshooting information supplied with the Macintosh.

- **Memory allocation failure. Try a larger memory partition.**

Try quitting and restarting the program. Try quitting other programs which may be running. If problem persists add more memory - see your Apple dealer.

- **No files of correct type in folder**

Either: a) The folder selected for batch execution has no files of the correct type (i.e. jobfiles for analyse or trade scans, or image files for expose scans), or b) The folder selected could not be opened by the application.

- **Program will not function without the add-in Scsi card**

Check installation of the Crab board (NuBus systems) or SCSI board (PCI systems) - see *Swapping the Macintosh* in Section 1.2.2. Call customer services if the problem persists.

- **Scanner Operation Failed because a command parameter is out of range**

Check Macintosh and scanner settings, try again. If the problem persists call customer services.

- **Scanner Operation Failed because a Data Type Qualifier is out of range**

Check Macintosh and scanner settings, try again. If the problem persists call customer services.

- **Scanner Operation Failed because a Mode parameter is out of range**

Check Macintosh and scanner settings, try again. If the problem persists call customer services.

- **Scanner Operation Failed because a parameter was out of range**

Check image dimensions or other scanner settings.

- **Scanner Operation Failed because an internal medium error occurred**

The buffer disk may be faulty, call customer services.

- **Scanner Operation Failed because an invalid parameter was encountered**

Check Macintosh and scanner settings, try again. If the problem persists call customer services.

- **Scanner Operation Failed because an unsupported parameter was encountered**

Check Macintosh and scanner settings, try again. If the problem persists call customer services.

- **Scanner Operation Failed because Inquiry Data has changed**

Quit and restart the Celsis™ application.

- **Scanner Operation Failed because Mode Data has changed**

Quit and restart the Celsis™ application.

- **Scanner Operation Failed because of a Blank Check Failure**

Quit and restart the Celsis™ application.

- **Scanner Operation Failed because of a command error**

Check Macintosh and scanner settings, try again. If the problem persists call customer services.

- **Scanner Operation Failed because of a Rounding error**

Check Macintosh and scanner settings, try again.

- **Scanner Operation Failed because of a Scan Error**

Try again. If the problem persists call customer services.

- **Scanner Operation Failed because of an Image Error**

Try again. If the problem persists call customer services.

- **Scanner Operation Failed because of an Internal Hardware Error**

Retry the operation. If this fails switch the scanner off then on again and retry. If the problem persists call customer services.

- **Scanner Operation Failed because of an unknown error**

Try again. If the problem persists call customer services.

- **Scanner Operation Failed because of overlapping commands**

Check that the scanner is not already engaged in another operation, try again.

- **Scanner Operation Failed because pixel depth specified is not supported**

Check the Macintosh and scanner settings, it may be that the format of the file to be exposed is not supported. If the problem persists call customer services.

- **Scanner Operation Failed because the image will not fit in the format specified**

The image will not fit on the storage device selected. Set up for a smaller image size, free up some storage space, select another storage device or select another format.

- **Scanner Operation Failed because the operation was aborted at the scanner**

This message is displayed when the **Stop** button on the scanner is pressed during a scan.

- **Scanner Operation Failed because the orientation specified is not supported**

Check the settings (it may be that the format of the file to be exposed is not supported) try again. If the problem persists call customer services.

- **Scanner Operation Failed because the pixel format specified is not supported**

Check the settings. If the problem persists call customer service.

- **Scanner Operation Failed because the scanner is busy**

Either the scanner is already performing an operation; wait until the operation is complete then retry. Or another piece of equipment, such as MagnaLink™/MagnaRip™ is using the SCSI bus: wait until the other system has finished its task then retry.

- **Scanner Operation Failed because the scanner is Not Responding**

Check scanner is switched on. If it is try switching the scanner off then on again. Try checking the cabling.

- **Scanner Operation Failed because the scanner is Not Ready**

The scanner is already performing a task, wait until the task is complete then retry.

- **Scanner Operation Failed because the scanner is reserved**

The scanner is already performing a task, wait until the task is complete then retry.

- **Scanner Operation Failed because the SCSI arbitration failed**

Call customer services.

- **Scanner Operation Failed because the units specified are not supported**

Check the settings, try again. If the problem persists call customer services.

- **Scanner returned Check Condition with no additional information obtainable**

Switch the scanner off then on again. Call customer services if the problem persists.

- **Scanner setup has changed... Click update, and then proceed with scan**

Follow the instruction.

- **The Job Queue is full you must wait until some exposes are finished then press start.**

Follow the instruction.

- **The Scanner has been reset please confirm settings before proceeding**

Check the scanner settings are correct before continuing.

- **This is an inconsistent TIFF file.**

Convert the image to TIFF or Photoshop™ CMYK.

- **This is not a Motorola Byte Ordered file (re-save in Photoshop ®)**

Convert image to TIFF or Photoshop™ CMYK.

- **This is not an Analyse Unit**

Check scanner operation and connectors.

- **This is not a CMYK TIFF file**

Convert image to TIFF or Photoshop™ CMYK.

- **This is not a standard (Macintosh) file. Attempting to read as TIFF...**

Help message.

- **This is not a TIFF File (version is wrong)**

Convert image to TIFF or Photoshop™ CMYK.

- **This isn't even an Intel Byte Ordered file. I cannot do anything with it.**

Convert image to TIFF or Photoshop™ CMYK.

- **TIFF Tag 256 invalid. Internal error**

Convert image to TIFF or Photoshop™ CMYK.

- **TIFF Tag 257 invalid. Internal error**

Convert image to TIFF or Photoshop™ CMYK.

- **Unable to understand TIFF resolution. Attempting to set to 12 l/mm**

Help message.

- **You must crop a non-zero image on the analyse unit before starting**

Follow instruction.

Index

A

Analyse Control window, 6-3

Analyse Queue window, 6-47

auto negative detection, 6-59

Autobalance, for Autocrop, 6-58

Autocrop, 6-54 , 6-55
- auto negative detection, 6-59
- Autobalancing, 6-58
- HR image names, 6-60
- mounting transparencies, 6-55
- prescan images, 6-59
- selecting, 6-59
- using Autofocus, 6-58
- using Autoscan, 6-57
- workflow, 7-1

Autofocus
- selecting, 6-5
- with Autocrop, 6-58

Autoscan
- after cropping, 6-29
- selecting, 6-5
- with Autocrop, 6-57

B

Black Offset dialog box, 5-35

Black Printer dialog box, 5-35

C

Cancel Edits window, 6-45

cast
- Black Point, 5-27
- Global, 5-27
- when to use, 5-27

Cast 2, neutral selectivity, 5-30

Cast window, 5-27 , 6-37

Catchlight window, 5-53

Celsis Accelerator Upgrade, 1-2

Celsis application, 1-1
- re-selecting, 1-7
- starting, 1-7

Changing, setup file, 6-7

Channel Boost, 5-25

Colour Correction window, 5-30 , 6-37

Colour Enhance Curve function, 5-34

Colour Enhance function, 5-32

Crab board, 1-2

Crop-Size window, 6-26

Cros DDEF CMYK/RGB, format, 6-11

Cros NGS, format, 6-12

D

DCS, format, 6-12

disk space required, 6-12 , 6-44

E

Edit menu, 3-13 , 6-49

Enter White and Black, 6-30

Enter White and Black window, 5-19
EPS Bitmap, format, 6-11
EPS CMYK/RGB, format, 6-10
EPS Greyscale, format, 6-11
error messages, 8-1

F

file formats, 6-9
File menu, 3-10
Format option, 6-51

G

Grey Balance & PD window, 5-8
Grey Balance Window, 5-16

H

help, 8-1
HR scan, 3-7
  select colour channel for greyscale, 4-6
  select Photoshop file format, 4-6
  select preview while scanning, 4-6

I

ICC profiles, 3-2 , 4-13 , 5-4
  Cancel Edits, 6-46
  format, 6-8
  input, 1-2
  output, 1-3
image
  colour editing, 6-34
  dimensions, 6-42
  editing, 6-24
Image File, 6-43
Image menu, 3-15
input profiles, 1-2

J

job
  editing, 6-48
  status, 6-50
Job Files
  auto name increment, 4-5
  selecting auto save, 4-5
Job Log, 6-54
Job Sheet, 6-40
  specifying to be left open, 4-4

K

keyboard shortcuts, 3-20

L

Limits window, 5-63
line art, 6-9 , 6-11
LR files, select automatic creation, 4-5
Luminosity folder, specifying, 4-4
Luminosity window, 5-5

M

Macintosh
  configuration, 1-4
  specification requirements, 1-4
  swapping, 1-5
measurement units, changing, 4-3
monitor
  select adjustment to simulate print process, 4-13

select colour temperature, 4-13
select type, 4-12

N

negative scanning, 6-5

neutral tone boost, neutral selectivity, 5-30

O

Operation Log, 6-62

out of range staining, 6-33

output profiles, 1-3

P

Pastel Boost function, 5-31

Pastel Boost window, 5-31

Pastel Curve function, 5-33

Pastel Mode function, 5-32

Permanent Tone Boost, 5-25

Photoshop 2.0 CMYK/RGB/Gray, format, 6-10

polychromatic colour removal. *See* UCR – PCR Data window

Preferences, 6-1
defining, 4-2
General, 4-3
HR Scan, 4-6
Monitor, 4-12
Prescan, 4-7
Queue, 4-11

prescans, 3-5 , 6-24
select auto negative detection, 4-8
select auto redisplay after corrections, 4-8
select display size, 4-8
select prescan folder, 4-10
select save to prescan folder, 4-7
select view while scanning, 4-7

Print Density function, 5-16

Progress, scan, 6-19

Q

queue
select 'add to queue' as default, 4-11
select 'stop to change' between transmission and reflection, 4-11
select queue display options, 4-11

queue control, 6-47

Queue from Scanner, 6-52

Queue menu, 3-16

R

reflection scanning, selecting, 6-5

Release Scanner, 6-62

Resolution option, 6-51

RGB standard images, 1-2 , 3-2 , 4-13

S

safety
clothing and jewellery, 2-2
electrical, 2-5
equipment and tools, 2-2
health and safety at work, 2-1
mechanical, 2-4
site, 2-3
warnings and cautions, 2-1

Sample Points window, 6-34

Sampling window, 5-64

Saturation window, 5-67

Scan Type, 6-13

scanning

abort, 6-21
image orientation, 6-13
mode selection, 6-12 , 6-50
setting up a scan, 3-1
start, 6-18

Scitex CT CMYK/RGB (Handshake), format, 6-11

Scratch Folder, specifying, 4-4

Select Scanner, 6-61

Setup File, 5-2
changing, 6-7

Setup file, retrieving, 3-3

Setup folder, specifying default, 4-3

Setup Sheet, 5-4

shortcuts, 3-20

Show Values option, 6-34

Special menu, 3-19 , 6-61

T

TIFF Bitmap, format, 6-9

TIFF CMYK, format, 6-9

TIFF Greyscale, format, 6-9

TIFF RGB, format, 6-9

Tone Boost window, 5-24

transmission scanning, selecting, 6-5

Turbo Control, 5-64

U

UCR - PCR Data window, 5-40

Under Colour Removal. *See* UCR – PCR Data window

unsharp masking. *See* USM Data window

USM, black fringe controls, 5-58

USM Data window, 5-54
Black Gain, 5-57
cross-coupling, 5-56
Level 2 functions, 5-58
Manual mode, 5-56
Preset USM, 5-55
USM Sharp, 5-56
USM Smooth, 5-56

W

workflow
Autocrop, 7-1
concurrent setup, 7-6
queue from scanner, 7-4

FUJIFILM